Textile World

OCTOBER, 1958

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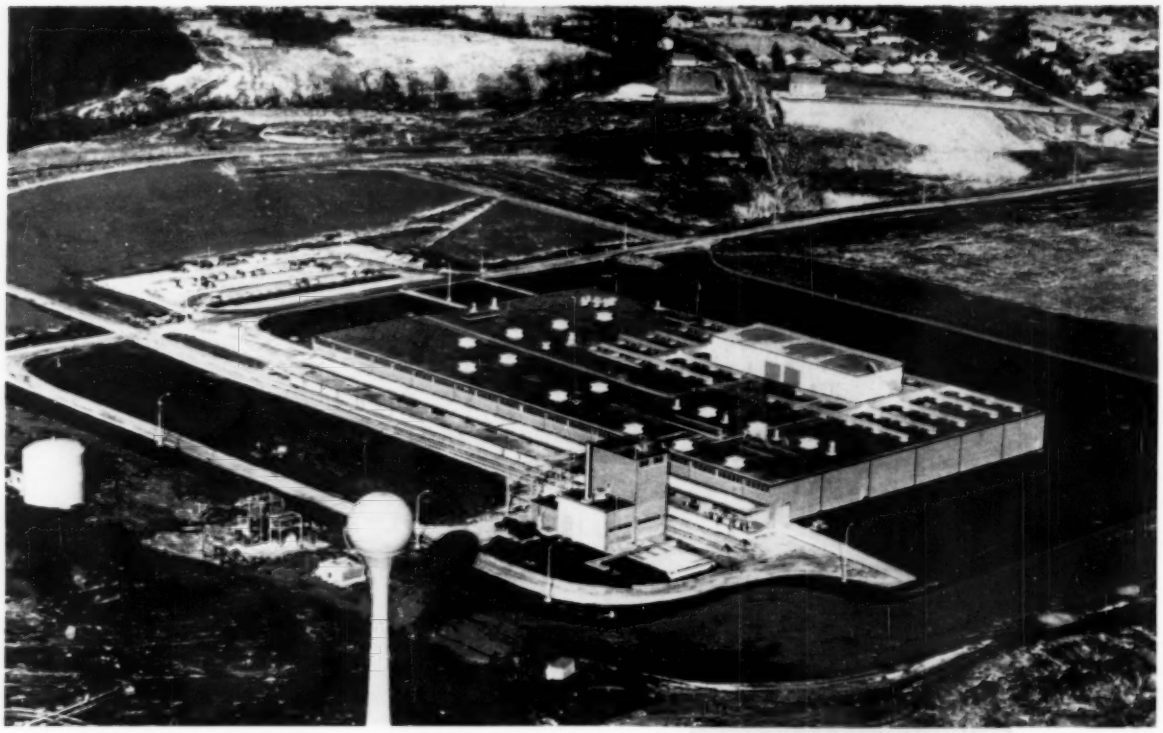

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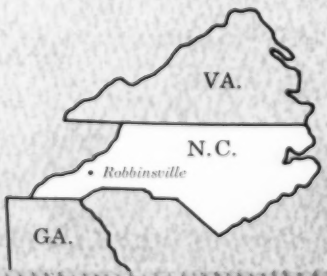

ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

This Month in **TEXTILE WORLD** October, 1958

Volume 108, No. 10

BUSINESS

Foreign-Trade Agreements Draw Blistering Attacks . . . 3
Canada Cracks Down on U. S. Textile Imports . . . 4
Price of Silk May Drop Sharply . . . 5
Merger and Modernization Hit Venezuelan Mills . . . 6
West German Mills Cool to the Common Market . . . 7
Fall Apparel Buying Improves Store Sales . . . 8
Pickup in Business Gets a Strong Push . . . 9
TEXTILE WORLD'S Index and Monthly Indicators . . . 10

PLAN '59–MODERNIZE NOW FOR GROWTH AND PROFITS

. . . THE CHOICE — Today's Choice: Plan or Drift (Editorial) . . . 43

. . . THE CHALLENGE — **How Modern Is American Industry?** The McGraw-Hill Department of Economics reports on the challenge to industry to grow at a profit . . . 45

. . . THE OPPORTUNITY — **The Textile Industry's Opportunities for Improving Profits.** Textiles may be one of the country's growth industries—but mills are not ready for a surging market. Here are department-by-department reports of profit opportunities . . . 49

. . . OPENING & PICKING — **Improved Machinery Produces Cleaner and Heavier Laps** . . . reduces cost per pound, improves subsequent operations, and lowers the grade of cotton used . . . 50

. . . CARDING — **New Equipment Speeds Manhour Production.** Labor costs can be cut 10 to 33% in carding, 75 to 80% in drawing, and 60 to 70% in roving . . . 52

. . . SPINNING — **Modern Machinery Slashes Yarn Labor Cost.** New frames double manhour production, improve yarn quality, reduce ends down, and increase efficiency . . . 54

. . . SPOOLING, WINDING & TWISTING — **Latest Preparatory Machines Make Better Yarn Packages** . . . lower yarn cost, and contribute to more-efficient weaving . . . 57

. . . WARPING & DRAWING IN — **Mills Go for New Machines.** Returns are warping speeds up to 900 yds. per min., drawing-in labor saving of 77 to 80%, and better warps in the weave room . . . 58

. . . SLASHING — **New Slashers Prove To Be One of the Best Investments.** New slashers produce 67% more yarn than rebuilt ones and 182% more than old ones . . . 60

. . . WEAVING — **Mills With New Looms Produce 30% More Cloth** . . . without increasing labor cost. One mill has increased productivity over 200% . . . 62

. . . TUFTING — **Improved Machines and Yarns Put Tufted Carpets on Top.** New machines are also making tufted bedspreads into big-time textile items . . . 64

. . . NONWOVEN FABRICS — **Mills Expand by Making Practical Nonwovens.** Newer and expanding mills are installing machines designed exclusively for nonwoven fabrics . . . 65

. . . WOOLEN & WORSTED — **Modernization Drastically Changes Woolen and Worsted Spinning.** Operations have been reduced from nine to four in 10 years . . . 67

. . . THROWING — **Throwsters Modernize With Textured-Yarn Machines.** New machines and methods for treating man-made fibers have kept throwsters in business . . . 69

. . . KNITTING — **Modernization in Knitting Mills Means More Production per Manhour.** Other advantages of modern equipment are wider style ranges . . . 71

Please turn the page

. . . CLOTH ROOM — **New Cloth Rooms Feature Labor Saving.** Progressive mills have made important changes that have resulted in better inspecting and lower costs . . . 75

. . . CHEMICAL TREATMENT — **Chemical-Treatment Advances Show Way to Profits.** Finishing plants making money today have invested in new machines that improve quality and cut costs . . . 76

. . . CHEMICAL-TREATMENT CONTROL — **Instrumentation—the Basis for Better Processing.** Smart management is relying on instruments rather than on human judgment for process control . . . 80

. . . TESTING & MACHINE CONTROL — **Modern Instruments Pay Off in Better Yarns and Fabrics.** Electronics is improving testing so that a better job is done in less time . . . 82

. . . ENGINEERING — **Modern Plants and Machines Lead to Greater Profits . . .** through better yarns and fabrics, less labor and materials handling, and little building maintenance . . . 84

DEPARTMENTS

Calendar . . . 14
Editorial . . . 43
Equipment and Supply News . . . 113
Fibers, Yarns, Fabrics . . . 133
Kinks and Short-Cuts . . . 101
Mill Maintenance . . . 190
New Dyes and Chemicals . . . 97
New Literature . . . 136
News About Men . . . 198
News About Mills . . . 13
News About Suppliers . . . 194
Obituary . . . 200
Pointers for Supervisors . . . 91
Questions and Answers . . . 110
Reader Service . . . 209
Round Table . . . 16
Textile Business . . . 3
Textile Chemicals . . . 95
Advertisers' Index . . . 208

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Foreign-Trade Agreements Draw Blistering Attacks

A blistering attack on the government's tariffs and quotas policy was made by New England textile men last month.

In particular, the Reciprocal Trade Agreements act passed by the last Congress served as a target for the ire of both textile men and union representatives as the special Pastore Senate Subcommittee resumed hearings on the ills of the textile industry.

After three days of hearings in Washington in July, the subcommittee recessed until last month. On Sept. 19, the first field hearing was held in Providence, R. I.

Only a few days after the July hearings, Congress extended a slightly altered Reciprocal Trade Agreements program for four years.

The Providence hearing quickly showed that textile men are strongly dissatisfied with the program Congress approved.

•

The textile industry failed to receive any substantial relief from damaging foreign competition, Seabury Stanton, Berkshire Hathaway, told the subcommittee. As a result, the industry "will have to attempt to operate during the next four years with the threat of a 5% reduction in tariff per year over and above the tremendous reductions which have already taken place since the end of World War II."

Mr. Stanton was critical of policies affecting cotton and man-made-fiber mills, but other spokesmen registered complaints against government policies affecting woolen and worsted mills.

Harold J. Walter, Bachmann Uxbridge, blamed much of late and current difficulties of these mills to "the trade and tariff policy the United States has pursued since 1934."

•

Labor unions were more bitter than mills.

Roland H. Benoit, president of the 8,000-member Industrial Trade Union, called the meeting "a waste of time." Neither he nor any other representative of his union attended.

"We're fed up with the various hearings covering the textile industry," he said.

"We're fed up, first, because we deem it a complete waste of time and effort to tell and retell our story to people who know the situation better than we do . . . The Administration in Washington has no intention whatsoever of doing anything to safeguard the textile industry."

•

Primary problems facing the industry, as pointed out in the July Washington hearings and in the field hearings last month are (1) foreign competition, (2) two-price cotton, and (3) machinery-depreciation life.

In the last two years, the government has moved a little way in relieving these problems.

Early last year, Japan and the U.S. entered the "voluntary quota" agreement to slow down damaging cotton-goods imports; and the Geneva Reservation, under which tariffs are raised on

Mill Sales and Profits Show Mixed 1958 Trends

Late mill operating statements by three companies show the same mixed trend of sales and profits that earlier statements showed.

• J. P. Stevens & Co.

Sales for nine months ended Aug. 2 were $269,343,474—down 11% from the $302,793,995 sales in the same nine months last year. Net income before taxes was $7,664,928—down 44% from the $13,713,285 net in the same period last year. Earnings per share of common stock amounted to $1.27, compared with $1.48 in the same nine-months period last year.

• Mohasco Industries, Inc.

Sales for the first six months of 1958 were $44,128,698—down 14% from the $51,642,878 sales in the same period last year. Net earnings were $2,015,840, or 60¢ a share—an increase of 52% over the $1,321,709 earnings amounting to 37¢ a share in the first six months of 1957.

Mohasco reduced its short-term bank loans to $8-million at the end of June, compared to $13-million at the end of December.

Quarterly dividends of 87½¢ on the 3½% preferred stock and $1.05 on the 4.2% preferred were declared.

• Botany Mills, Inc.

Sales for the first six months of this year amounted to $48,526,000—up 14% over the $43,824,000 sales in the first half of last year. Net income was $3,731,000—up 11% from the $3,344,000 income in the first six months of 1957. But $600,000 was deducted this year for amortization charges not applicable in 1957.

Apparel Fabrics Sparked Second-Quarter Improvement

This year's improvement in mill production began with apparel fabrics, with nonapparel fabrics slower to get under way, according to figures released by the Bureau of the Census.

Output of women's and children's apparel fabrics hit 38.6-million finished linear yards in the second quarter of this year—up 25% from first-

wool-fabric imports when they reach 5% of domestic production for the preceding three years, slowed down imports in 1957 and 1958.

A switch this year in the cotton parity-price program to permit growers a choice of low acreage and high parity price or higher acreage at lower parity price is expected to net more cotton at perhaps lower prices. This shift was the first relaxation in the small crop-high price policy in 25 years.

In the matter of machinery depreciation, a "token" aid was passed by Congress in its last days before adjournment. On purchases up to $10,000 ($20,000 in the case of an unincorporated business where a husband-wife joint return is filed), a flat 20% of the cost can be claimed the first year. That reduces the amount to be depreciated on a $10,000 purchase to $8,000, which then becomes the amount to prorate over the depreciation life. Also in the first year, the regular depreciation can be charged off against the $8,000.

The new 20% deduction does not apply to buildings; it applies only to machinery and equipment with a useful life of six years or more.

•

But the textile industry's disappointment with the Trade Agreements program Congress extended is far from an admission of defeat. Tariff and foreign competition are an old story, and a never-ending one, to the industry.

In the last two years, sentiment in Congress has shifted toward protecting U. S. industries when imports become a serious damage. That's why some relief for the textile industry was won last year.

And twice this year special Senate Subcommittee hearings similar to the Pastore committee hearings have resulted in substantial government assistance: in the cases of minerals producers and railroads.

Although the Trade Agreements were renewed for four years, the manner of administering the law can have a strong effect on the textile industry. If the hearings of the Pastore subcommittee only eases some of the harshness with which the Agreements have been administered in the past, they will have served the textile industry well.

Canada Cracks Down On U. S. Textile Imports

WINNIPEG, CANADA—Trade between the U.S. and this country received a sharp setback last month. The Federal Government (Canada) amended its Customs Act to give the Administration sweeping powers to increase tariff duties under a new antidumping clause.

The change hits hard at textile goods, which have been among the goods "dumped" in great quantity.

The U. S. Government protested the changes in an extremely sharp note to the Canadian Government. The note accused the Canadian Government of violating provisions of GATT and warned that the new bill creates "dangerous precedents for international trade" and weakens the ability of the U. S. Administra-

tion to withstand "strong pressures for retaliatory measures."

●

The main provision of the bill is aimed at changing the valuation of imported goods for tariff duties. Instead of the "fair market value" used for imposing tariff duties in the past, the valuation of imported goods will now be on an arbitrary basis, with the Minister of National Revenue having the power to fix the value.

The basis to be used by the Minister in fixing the value is the cost of production in Canada plus a reasonable profit. If no similar product is made in Canada, and therefore the cost of production is unknown, the Minister nevertheless has the authority to fix the value on the basis of what he thinks the cost of production would be if the goods were produced in Canada. The Minister also can say what constitutes "reasonable profit."

The bill provides for an appeal against a valuation, but in practice such an appeal never gets anywhere.

●

Liberals and Socialists in Parliament fought the bill tooth and toenail, but Prime Minister John Diefenbaker's overwhelming Conservative majority passed it over all opposition.

Great Britain is expected to protest the bill vigorously because it will substantially raise duties on British woolens and worsteds.

Since the whole new scheme is arbitrary and where and how it hits imports is completely in the hands of the Administration, no one outside the government knows how it will affect British goods. In his campaign for election, Diefenbaker promised to divert trade with Canada from the U.S. to Britain. He now has the machinery to do whatever he wishes.

There's no doubt, though, about how the new scheme will affect U.S. trade. Unless the U.S. Government is successful in its attempt to soften the obvious intent of the Canadian Administration, U.S. textiles will find rough going in the Canadian market.

Price of Silk May Drop Sharply

TOKYO—A cheaper, more-stable price for silk may be in the making.

Early last month, a leading silk importer in New York proposed that Japan hold an international silk conference in Tokyo to "discuss ways and means to stabilize the ever-fluctuating Japanese silk market."

Favor for the proposal is snowballing among silk industrial circles here. The Japanese silk industry has reached the point that it needs a worldwide program to prop it up.

Silk in this country is traveling the same economic road that U.S. textile men claim has been so destructive for cotton in the U.S. Forced high prices, maintained by government support aimed at aiding silk farmers, has lost many markets for silk; and other fibers, mainly rayon, have been steadily growing at the expense of silk.

The Japanese Government has spent nearly $70-million since

quarter output but still 6% below output in the second quarter of 1957.

Men's and boy's clothing-fabrics production was 29.9-million yds.—up 9% over the first quarter of this year.

Woolen and worsted fabrics showed a sizable increase, but they lagged a little behind cotton and man-made-fiber apparel fabrics because of seasonal factors.

Woolens and worsteds hit 71.8 million yds.—up 17% over first-quarter 1958 production but 11% below second-quarter 1957 output.

Nonapparel-fabrics production still slumped in the second quarter. The total of all nonapparel fabrics produced dropped 22% from the first quarter to the second quarter.

Blanketing dropped to 1.4-million yds.—down 30% from the first quarter.

Tire-cord and tire-cord-fabric output dropped 13% from the first quarter to the second quarter, amounting to 80,533,000 lbs. That was 30% below the second quarter of 1957, reflecting the slumping sales of automobiles.

U. S. Becomes Austria's Best Fiber Customer

VIENNA, AUSTRIA—The United States became Austria's largest textile-fiber customer in the first half of this year. West Germany slid into second place.

U. S. fiber purchases in the first six months of 1958 rose to $2,146,100, nearly double the $1,165,400 worth bought in the first six months of 1957.

West Germany's purchases dropped to $1,611,000 in the first half of 1958 from the $1,850,000 worth bought in the first half of 1957.

These two countries together accounted for more than half of Austria's total fiber exports—$3,757,100 worth of the total of $7,261,500 worth exported in the first six months of 1958. That amounts to a little over 51% of the total.

In the first half of 1957, the U. S. and West Germany accounted for a little more than 56% of Austria's total fiber exports—$3,015,400 worth of the total exports of $5,315,400 worth.

Use of Wool Fiber Drops in First Half

The use of wool fiber dropped 28%, from 211-million lbs. (scoured basis) to 151-million lbs. in the first half of 1958 in comparison with the same period in 1957, according to figures released by The Wool Bureau.

The use of apparel wool dropped 26%, from 138-million lbs. to 102-million lbs. Carpet wool fared worse. It dropped 33%, from 73-million lbs. to 49-million lbs.

However, woolen and worsted mills did not suffer the same drop as the use of wool because of the increasing use of man-made fibers on the woolen and worsted systems.

Total fiber consumption on these two systems dropped only 18%, from 26-million lbs. to 21.3-million lbs.

Changes in the percentages of fibers used in the first half of 1958 from the percentages used in the same period in 1957 were:

	1957	1958
Wool, shorn and pulled	53(%)	48(%)
Wool, other	25	27
Man-made fibers	13	16
Other fibers and hairs	9	9
	100%	100%

Buying Activity Steps Up In Knit-Goods Market

Stepped-up buying activity was experienced in most segments of the knit-goods market last month. But extreme caution marked most of the activity. Sales remained small and delivery dates near.

Buyers gave no indication that they have much intention of changing the hand-to-mouth buying strategy that has characterized textile-market activity for many months.

Wholesalers and chain-store buyers were making commitments into early 1959, but retailers were holding their interest to 90-day and closer delivery. Many cutters and sewers of knit goods were buying such small quantities that it was evident that they prefer to lose sales rather than risk even small overstocking.

In some areas, some styles of sweaters, for example, pressure for quick delivery to make up for late and short buying for a market that's

1952 in trying to stabilize the silk market. This year alone, $42-million was allocated for buying up excess silk; but it will be drained off well before the end of the year and well before the excess is depleted.

The net result has been higher and higher prices, with little, if any, real stabilization. This year's prices of silk are 124% above 1949 prices. Rayon has advanced only 78% over 1949 prices.

The price of silk is now $530 a bale (132 lbs.), compared to Red China silk available at prices ranging from $417 to $444 a bale.

In the first half of this year, Japan's silk exports dropped to 17,355 bales, down almost 41% from the 29,400 bales exported in the same period last year.

Some of this drop was offset by a gain in silk-fabric exports, which rose from 20,371,000 sq. yds. in the first half of 1957 to 21,018,000 sq. yds. in the first half of this year. However, that was a gain of only a little more than 3%.

●

The market demand is definitely for a major cut in prices, Japanese silk interests say. Opinion is that the price must drop to at least $444 a bale—more than 16% on this year's price.

Even that cut would bring the price of Japanese silk down only to the top Red China prices.

But home consumption is the biggest factor in stabilizing the silk market. At present, Japan consumes only about 45% of its silk crop. A spokesman of the Ministry of International Trade and Industry estimates that home consumption would increase to 65% of the crop if the price were lowered to $444 a bale.

Mergers and Modernization Hit Venezuelan Mills

CARACAS, VENEZUELA—The textile industry in this country is beginning a round of mergers and plant modernization. Reasons: rising labor costs and a recent favorable protective tariff decree.

Construction has started on what will be Venezuela's largest integrated cotton mill: the $6-million A. C. Telares de Palo Grande plant on the outskirts of Caracas, due for completion by mid-1959. This new mill is the result of a merger between Palo Grande and C. A. Telares de Caracas.

It will have 24,000 spinning spindles; over 500 looms; and continuous bleaching, dyeing, and finishing equipment. Employment will be about 900, and the mill will operate three shifts.

Other mergers and widespread building and modernization are expected.

Textile manufacturers signed an agreement with the Ministry of Development promising to modernize and hold down prices in exchange for government loans and protective tariffs.

●

But labor costs are expected to increase sharply. Textile labor unions, reorganized after Venezuela's revolution, have drawn up demands that, if accepted, will hike wages as much as 60%.

Consensus is that the unions will get most, if not all, of what they plan to ask for.

With the government pressing them on one side and labor on the other, mill men see no out except to reduce costs by raising efficiency.

The Venezuelan Textile Assn. is already taking steps to provide its members with technical assistance. It has engaged the British firm of Platt to carry out an industrywide study of plant and equipment needs as part of its agreement with the government.

•

What effect these moves in the Venezuelan industry will have on textile imports from the U.S. is uncertain.

Last year, Venezuela bought $35-million worth of fiber and textile products from the U.S.—an increase of $6-million worth, or 21%, over 1956. The largest slice went for cotton goods, about $15-million. Another $10-million went for man-made-fiber goods.

Some observers think this $25-million market for cotton and man-made-fiber fabrics will shrink as Venezuelan mills modernize and expand.

Others say the rising standard of living and higher income will create demand faster than Venezuelan mills expand capacity, and therefore U.S. imports will continue to increase.

Whatever the effect on U.S. trade, partisans here envision the future Venezuelan textile industry as "one of the most modern in the world in a few years."

West German Mills Cool to the Common Market

BONN, GERMANY—The European Common Market idea is not resting easy with the West Germany textile industry.

Last year, for the first time since 1951, imports of finished and semifinished goods ran ahead of exports. After six years of a favorable balance in foreign textile trade and one year of unfavorable balance, mills consider their present most pressing problems to be (1) to regain lost export markets and (2) to keep the domestic market.

The coming Common Market is looked upon by many textile men as a hindrance to solving these problems.

West Germany's climb back up from the destruction of World War II has been based largely on hard work, wage rates somewhat lower than most, if not all, of the six member nations of the Common Market, and exports exceeding imports.

Many people inside and outside the textile industry believe that much of the advantage West Germany has enjoyed will be wiped out by participation in the Common Market.

•

The common tariff wall to be built around the six participating countries is one factor. A 30% increase over present German rates may be established.

unexpectedly lively built up. Deliveries by mills ran two to four weeks late, and delivery dates on new quotations were a month to a month and a half ahead.

The situation was nearly as bad on underwear. Orders were brisk, but delivery was delayed. P. H. Hanes, for example, was heavily sold a month in advance.

Mills in general reported business satisfactory. Prices generally were holding firm, and prospects were that they are much more apt to advance slightly than to drop.

Inventories in channels beyond the mill are still low, and almost any consumer demand must be met by mill deliveries.

Although many knitting mills would like to see brisker movement and some change in hand-to-mouth buying, the present market condition strongly favors mills. There may not be a buying rampage this year, but there also will not be a serious buying slump.

For next spring, knit goods are expected to gain over woven goods in many uses. Most knitting mills look forward to a good year, partly as a result of a general improvement in textiles and partly as a result of market advances by knitted fabrics.

Berkshire Knitting Mills Builds Plant in Peru

LIMA, PERU—Berkshire Knitting Mills, Reading, Pa., is moving into South American hosiery operations.

Within the next 30 to 60 days, the first Berkshire hosiery to be made in South America will come from the machines of Berkshire del Peru, S.A., an affiliate of Berkshire Knitting Mills.

The new mill represents an investment of approximately $400,000 in U. S., Peruvian, and Bolivian capital. It will have a capacity of 7,000 to 8,000 doz. pairs of nylon stockings a month. It will be air conditioned and employ about 90 people.

Management of the plant includes Paul Guenther, president of Berkshire Knitting Mills; Oscar Berckmeyer, director in Peru; and Eudoro Galindo Tuiroga, managing director in charge of mill operations.

Berkshire already has manufacturing plants in Ireland and Germany.

TEXTILE BUSINESS

Israel Becomes an Exporter

TEL-AVIV, ISRAEL—Israel's cotton spinners just got their first foothold on foreign markets with a $140,000 order of yarns from an unspecified Scandinavian country.

The order is the first success of a central export-marketing organization set up by Israeli mills in an effort to penetrate foreign markets and keep Israel's expanding textile industry busy.

A new attack on foreign markets now in the planning stage is a tour of the U. S. and Canada to show Israeli fabrics made up in Paris fashions.

This venture is a French-Israeli cooperative effort sanctioned by interests in the two countries. Later, a similar exhibit in Israel will feature French fabrics in Israeli fashions.

Mill Failures Up

Eleven textile mills with liabilities of $709,000 failed in the U. S. in August of this year, according to Dun & Bradstreet.

That brought the total for the first eight months of 1958 to 74 mills with liabilities of $8,066,000, compared with 68 mills with liabilities of $7,768,000 in the first eight months of 1957.

For the month of August alone, the 11 failures with $709,000 liabilities this year compared with 5 failures with $197,000 liabilities in August, 1957.

Rayon Shipments Up In August

Total shipments of cellulosic man-made fibers, excluding acetate staple and tow, in August amounted to 86,600,000 lbs.—up 9% over July but 2% below August, 1957, according to Textile Economics Bureau.

U. S. shipments accounted for 84,700,000 lbs. of the total, and exports accounted for 1.9-million lbs.

Shipments of yarn gained more than shipments of fiber.

Rayon yarn in regular and intermediate tenacities totaled 14.6-mil-

Opponents of the Market say such an increase will "bring disaster" to German mills and "play havoc" with the price structure.

The net effect, these men say, will be to induce retaliation by countries outside the tariff wall, particularly the United States and Great Britain, two important West German import markets.

In the face of such retaliation, there's small chance of regaining the export markets necessary to restore the favorable export-import balance lost last year.

•

Another factor is that the Common Market is too limited, these critics, plus much of the majority that favors the Common Market, think.

The six member nations have a combined population of some 160-million. The Free Trade Area sponsored by Britain's Reginald Maudling and backed by West Germany's Economic Minister Ludwig Erhard would include 14 countries of Free Europe, some 260-million people.

This larger area would comprise a better market and avoid retaliatory measures by neighboring countries. It would offer similar advantages enjoyed by manufacturers in the large, homogenous U. S. market.

However, one of the big problems facing the Free Trade Area, if it develops, will be restricting the flow of textile goods from a cheap-labor country outside the Area through a member country into the Area; for example, shipments from British Crown Colonies, Possessions, and Dominions into Great Britain and thence into the Area market.

•

But the Common Market is a reality. Whether the more-extensive Free Trade Area comes into existence in a few years is a question. It is now still in the exploration stage.

Also very real to West German textile men are their shrinking exports and increasing imports. While criticism of the Common Market is widespread, textile men realize that they can do little about it now and are looking for quick measures to improve their position.

One way to lighten their problems, most of them agree, is to step up the efficiency of mills. They estimate that an average expenditure of $150-million a year for the next 10 years might help to pull the industry out of its dilemma by bringing production methods up to date enough to compete with high U. S. standards.

Fall Apparel Buying Improves Store Sales

Surging fall sales of women's dresses, coats, and sportswear and back-to-school clothing for children sent sales by the nation's department stores to only 1% below last year's sales.

In the month mid-August to mid-September, the best gain

was in the Boston district, where sales ran 9% ahead of last year for the same period and leveled the year at 1% below the 1957 period.

New York (+2%) and Kansas City (+1%) still led the nation in a comparison of 1958 sales vs. 1957 sales. Chicago (—4%) and St. Louis (—3%) were having the nation's poorest sales.

Pickup in Business Gets a Strong Push

The pickup in textile business gathered steam last month as the seasonal fall movement of goods got under way at retail levels. Volume increased in most lines of textiles, and prices either held firm or inched upward.

But the extreme caution of cutters, wholesalers, and retailers in late months was catching up with them. Inventories beyond the mill level were rapidly evaporating, and buyers were scurrying around trying to place rush orders.

Mill orders for finished goods were still small, but reorders were mounting.

Here's how things were shaping up:

• **Department-store sales** jumped to only 1% below 1957 for the year from January to mid-September, after fluctuating 2% to 3% below last year for most of 1958.

• **Retail trade,** sparked by the movement of textile goods, increased for 11 consecutive weeks, according to Federal Reserve Board figures late last month.

• **Mill production,** measured by TEXTILE WORLD's Index, p. 10, rose to 107 (1954=100). That was the fifth month in a row, except for the July vacation dip, that the Index has risen since it turned upward from the low of 96 in April.

• **Prices were turning up.**

Heavy industrial fabrics such as drills, twills, and sateens used in automobiles jumped ½¢ to 1¢ a yd. when Ford Motor Co. and the union reached a labor agreement that avoided a strike.

Man-made-fiber fabrics in most wearing-apparel constructions were selling in good volume, much of it for forward delivery at prices that had advanced by small increments for several weeks.

Cotton gray goods moved well, but mostly in fill-in lots, at recently improved prices. Bargain prices and price shading were no longer a factor in the market.

Sheets, pillowcases, blankets, and bedspreads enjoyed a run of sales that sent prices up on most lines. After the price increase, a slight lull set in late in the month; but declining inventories at retail level assured mills that another wave of buying at the new prices will develop soon.

Generally improving business ,with textiles well in the van and faced with abnormal inventories, accounted for the upswing in the rate of improvement. On every hand, textile men were expressing satisfaction with the way business is developing. Most of them were girding for a much-improved half year in late 1958 and early 1959.

lion lbs.—a gain of 20½% over July and 12½% over August, 1957.

Acetate-yarn shipments totaled 21-million lbs.—up 8% over July and 14% over August of last year.

High-tenacity-rayon-yarn shipments were 22.7-million lbs.—up 4% over July but slightly under August, 1957.

Rayon staple fiber and tow shipments amounted to 28.3-million lbs. —up 9% over July but 16½% under August, 1957.

Red China Buildup Puts Emphasis on Textiles

BONN, GERMANY—Red China has just put into operation a new cotton spinning mill with 90,000 spindles in the province of Chansi, according to reports here. All equipment was built in China.

The new plant is part of a textile combine comprising four spinning mills with a total of 340,000 spindles and several weaving mills totaling 8,000 looms. Dyeing and printing plants will be added later.

Construction of the new mill is part of Red China's buildup of industry. Cotton goods from Red China are already a strong competitive factor in the Far East, and plans are to extend all textile markets.

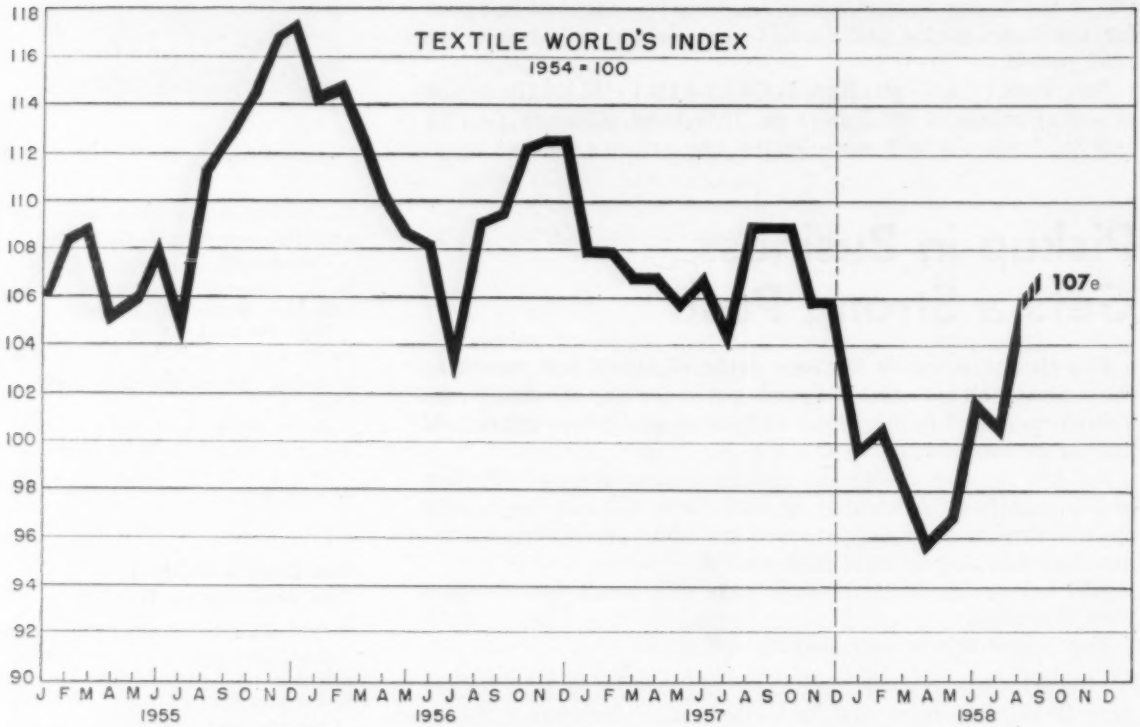
Last year, production amounted to 18-million yds. of woolen cloth, 150-million yds. of silk cloth, 50-million bales of cotton yarns, and 5.2-billion yds. of cotton cloth.

Communists Offer Barter For Argentine Wool

BONN, GERMANY—The government of Communist East Germany is reported to have approached the government of Argentina to barter a complete power station for about $20-million worth of Argentine wool.

The offer probably will be accepted. Argentina has a huge surplus of exportable wool—about 100,000 tons worth about $100-million—and is in need of foreign currency and the imports it will buy.

Since one of Argentina's pressing needs is for electrical power, sources here think she will barter with East Germany.



Index of manhours worked in the textile industry adjusted for changes in productivity

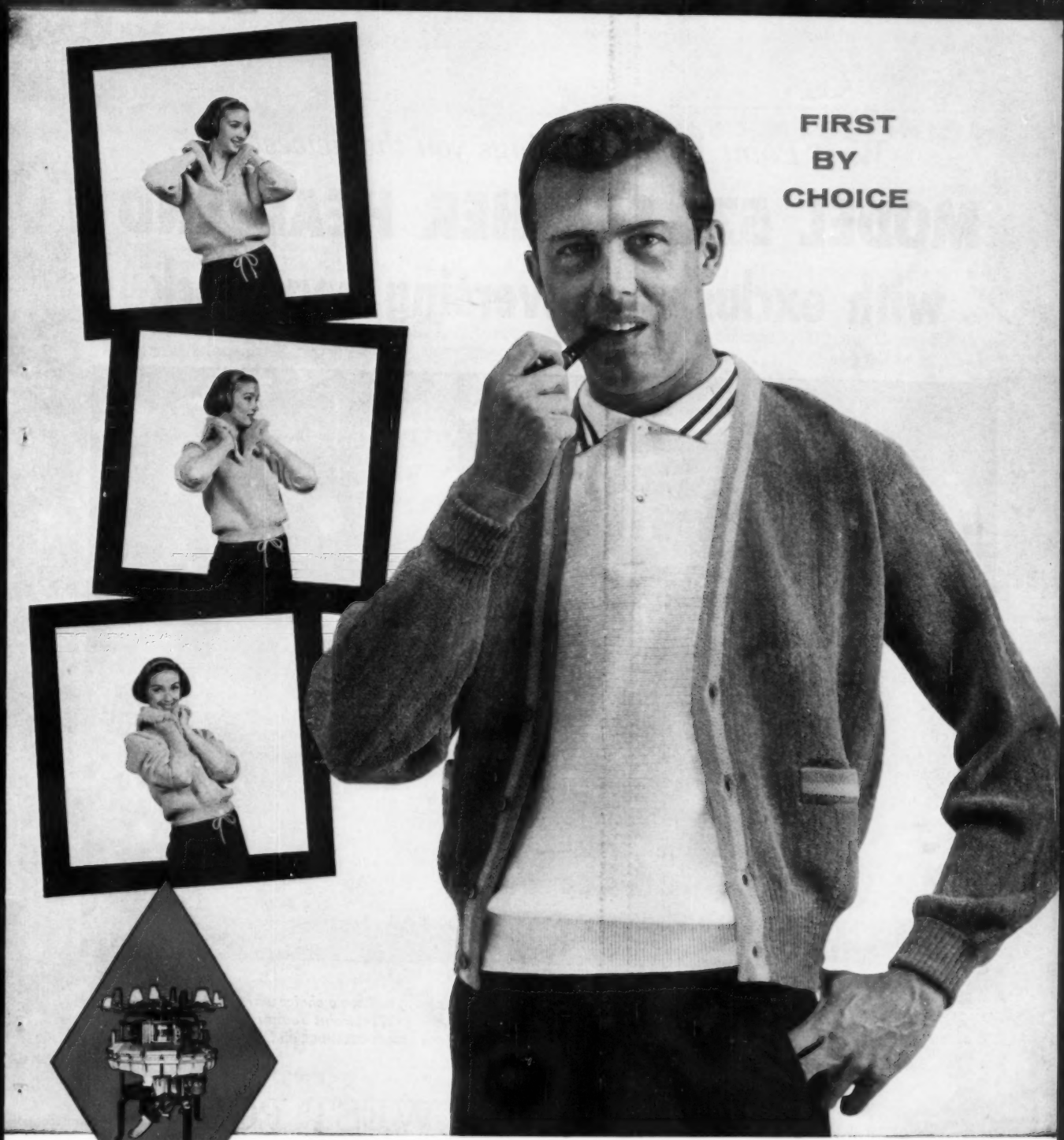
Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954 = 100)	**107**	**106**	**109**
Employment (thousands) B.L.S.	950.8	919.2	930.6
Production Workers (thousands) B.L.S.	860.2	829.6	839.7
Weekly Earnings B.L.S.	$58.89	$57.75	$58.65
Hourly Earnings B.L.S.	$1.51	$1.50	$1.50
Weekly Hours Worked B.L.S.	39.0	38.5	39.1
Production Index (1947-1949 = 100) F.R.B.	102	86	100
Wholesale Price Index (1947-1949 = 100) B.L.S.	93.3	93.3	95.4
Manufacturers' Sales (million $) Commerce	1,046	1,025	1,089
Manufacturers' Inventories (million $) Commerce	2,561	2,572	2,642
Inventories-to-Sales Ratio	2.45	2.51	2.42
Exports (million $) Commerce	106,007	130,607	134,296
Imports (million $) Commerce	65.975	70,315	74,074
Stock Price Index (1941-1943 = 10) Standard & Poor's	22.58	21.13	20.21
Failures (number) Dun and Bradstreet	11	13	5

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947-1949 = 100) F.R.B.	137	134	145
Consumer Prices (1947-1949 = 100) B.L.S.	123.9	123.7	120.8
Wholesale Prices (1947-1949 = 100) B.L.S.	119.1	119.2	118.4
Population (millions) Census	171.7	171.4	168.6
Unemployment (millions) Census	4.7	5.3	2.6
Employment (millions) Census	65.4	65.2	66.4
Personal Income (billion $) Commerce	355.6	354.2	352.1

For more data, circle A-1 on Reader Service Card →



"Knitted Outerwear" . . . from the Wildman Jacquard LH-6

Discriminating people who want both style and quality in a sweater, daily choose knitted fabrics from this versatile machine • The LH-6 will knit plain jersey . . . links and links . . . cross links and links . . . half cardigan . . . 2 or 3 color Jacquard designs . . . self pattern designs — with 2 x 2 or 1 x 1 cuff • Available in fine cuts • For complete technical data, write for bulletin LH-6.

All day long . . . sweaters belong

WILDMAN JACQUARD

a subsidiary of Draper Corporation, Hopedale, Mass.

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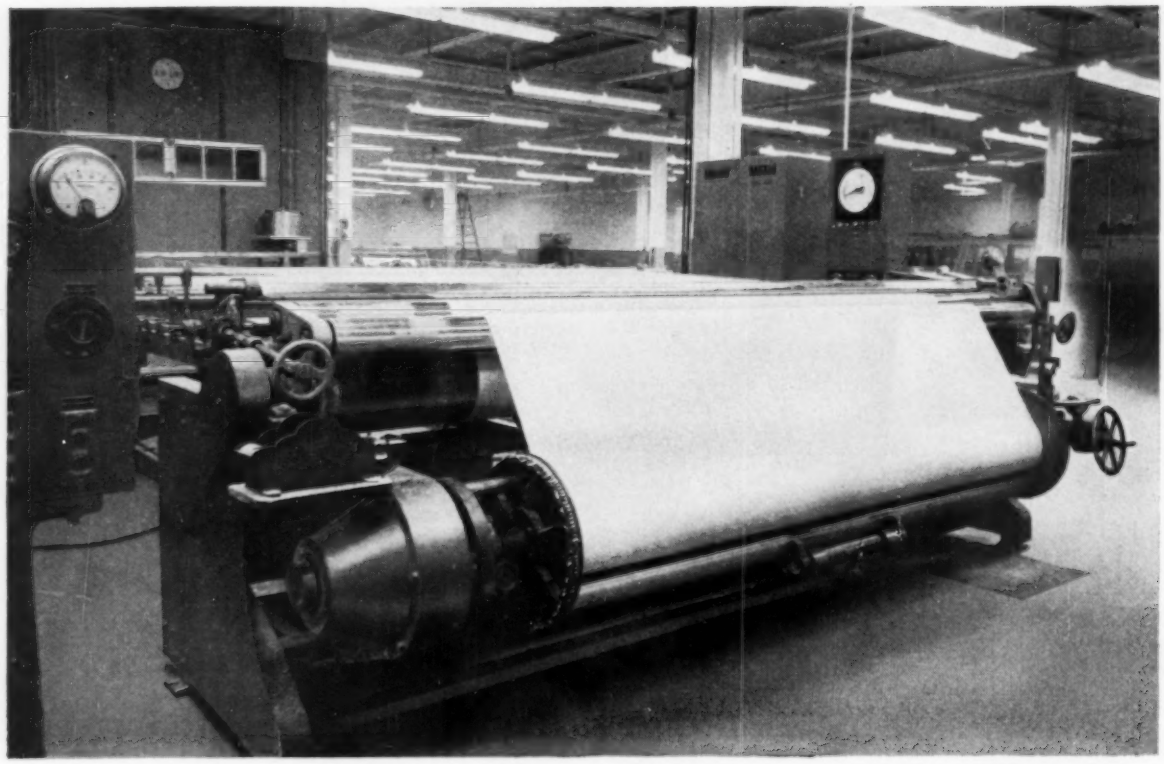
Manufacturers of HEMPHILL BANNER Knitting Machines

For more data, circle A-1 on Reader Service Card →

West Point Foundry brings you the newest...

MODEL 571 SLASHER HEAD END
with exclusive traversing headstock



Every feature of this new Model 571 Slasher head end emphasizes quality.

The massive headstock and tailstock support the widest loom beams with no long arbors projecting beyond the heavy iron frames. *And* . . . both headstock and tailstock traverse toward the center together to support the narrowest loom beam with no long inward projecting arbors . . . providing the rigid beam support desirable for high speed, high quality slashing.

Pneumatically-operated press roll and nip rolls are standard, as are the solid steel nip rolls and heavy-duty 3-inch diameter arbors.

Remember, you have a choice with West Point because West Point Foundry makes both MULTI-CYLINDER *and* AIR-DRI® *Slashers.*

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Manufacturers of HEMPHILL BANNER Knitting Machines

NEWS ABOUT MILLS

American Thread Co., Clover, S. C., has added a preblending operation at the plant. Ten new openers, six blenders, and a hydraulic rebaling press have been installed.

Beaunit Mills, Fountain Inn, S. C., is expanding its tricot and knitting plant by 15,000 sq. ft.

Delta Worsted Mills, New York, N. Y., has been formed to produce casual worsted fancies for women's suits and sportswear.

Eaton Knitting Co., Hamilton, Ont., is closing. The company had employed about 550 people.

Futurama Knitting Mills Ltd., Toronto, Ont., has been granted a charter by the government to manufacture knitwear. Capitalization totals $40,000. Irving Jacobson is one of the incorporators.

Green River Mills, Tuxedo, N. C., will close as soon as its present orders are completed. It manufactures combed cotton yarns and employs about 260 people.

Jankok Textile Industry Co. Ltd., Toronto, Ont., has been issued a charter by the Province of Ontario to manufacture textiles. Capitalization consists of 18,000 preferred shares with par value of 10 dollars each and 20,000 shares without par value.

Lynne-Knit, Inc., Mt. Airy, N. C., is a new company formed by Edward Heathcote, Frank Heathcote, and D. C. Lewis.

J. B. Martin Co., New York, N. Y., has leased a modern 21,000-sq.-ft., one-story building in the Batesburg-Leesville area, S. C. The company manufactures pile fabrics and velvets.

C. H. Masland & Sons, Carlisle, Pa., has acquired the spinning equipment located in the former United Yarn Div. Plant, recently operated by Mohasco Industries, Inc., Brockton, Mass.

Merrimac Knitting Mills, Inc., Franklin, N. H., has begun expansion of its production of women's seamless nylon hosiery.

Munsingwear, Inc., Minneapolis, Minn., is planning a one-story, 22,000-sq.-ft. plant in Montgomery, Minn., almost three times the size of its present plant.

Nebel Knitting Mills, Charlotte, N. C., is planning to expand production of seamless nylon hosiery and has invested $1-million in new machines and equipment.

New Bedford Cordage Co., New Bedford, Mass., and **Wall Rope Works, Inc.,** New York, N. Y., have merged.

New Milford Bleachery & Dye Works, Inc., New Milford, Conn., has begun operations.

Owenby Mfg. Co. of North Carolina, Inc., Andres, N. C., has been formed with capital stock of $100,000 to manufacture textiles.

Red Bank Mill, Inc., Red Bank, S. C., has been bought by Textile Banking Co., Inc., New York, N. Y. The price was reported as $230,000.

Roxbury Dyeing Corp., Paterson, N. J., has started operations on the premises formerly occupied by Duchess Dyeing Corp. and will concentrate on the dyeing and finishing of silk and man-made-fiber fabrics. The company has 26 dye boxes and has bought a dry box.

Sayles Finishing Plants, Inc., Greenville, S. C., will install a continuous-bleach range in its Sayles-Biltmore Bleacheries, Biltmore, N. C.

Shamrock Knitting Mills, Inc., Marietta, Ga., has opened a knitting plant near Smyrna, Ga.

J. P. Stevens & Co., Inc., Greenville, S. C., has installed air-conditioning equipment in the first-floor weave room of its Seneca plant. The total cost was given as $150,000.

Swan Dyeing & Finishing Corp., Swansea, Mass., is a new firm which has started operation. The new firm has bought the former Swansea Print Works of about 125,000 sq. ft. It has bought 24 jigs, three covered tenters, and one Burlington machine from Herzl Dyeing & Finishing Corp. The company specializes in linings, primarily of man-made-fiber fabrics.

Wamsutta Mills, New Bedford, Mass., will discontinue operations as of November 1. Production of Wamsutta-brand fabrics will continue at M. Lowenstein & Sons' plants at Columbia and Lyman, S. C.

Textile World

CALENDAR

October

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 1

National Cotton Council, Chemical Finishing Conference, Washington, D. C., Oct. 1 & 2

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 6 to 10

North Carolina Textile Manufacturers Association, Carolina Hotel, Pinehurst, N. C., Oct. 9 & 10

Southern Textile Overseers Association, Greenville, S. C., Oct. 10

AATCC, Metropolitan section, Kohler's Swiss Chalet, Rochelle Park, N. J., Oct. 10

ASME-ASLE Lubrication Conference, Statler Hotel, Los Angeles, Calif., Oct. 13 to 15

Packaging Institute's 20th Annual National Packaging Forum, Edgewater Beach Hotel, Chicago, Ill., Oct. 13 to 15

American Society for Testing Materials, Committee D-13, fall meeting, Sheraton-McAlpin Hotel, New York, N. Y., Oct. 14 to 17

Textile Recorder International Textile Machinery & Accessories Exhibition, Belle Vue, Manchester, England, Oct. 15 to 25

Conference on Military Applications of Fabrics for Coating (sponsored by the Textile Fabrics Committee, Quartermaster Advisory Board, National Research Council, National Academy of Sciences), Quartermaster Research & Engineering Center, Natick, Mass., Oct. 16 & 17

46th National Safety Congress, Conrad Hilton Hotel, Chicago, Ill., Oct. 20 to 24

1958 Cotton Spinner-Breeder Conference, sponsored by the Advisory Research Committee of Delta Council, Lubbock, Tex., Oct. 21 & 22

Southern Textile Methods & Standards Association, Clemson House, Clemson, S. C., Oct. 23 & 24

AATCC, Western New England section, Rapp's Restaurant, Shelton, Conn., Oct. 24

Alabama Textile Operating Executives, fall meeting on carding and spinning, Langdon Hall, Auburn, Ala., Oct. 25

Institute of Textile Technology, meeting of the Technical Advisory Committee & Board of Trustees, Charlottesville, Va., Oct. 28 & 29

Carded Yarn Association, annual meeting, The Homestead, Hot Springs, Va., Oct. 28 to 31

American Institute of Electrical Engineers, annual fall textile conference, North Carolina State College, Raleigh, N. C., Oct. 30 & 31

AATCC, national convention, Hotel Conrad Hilton, Chicago, Ill., Oct. 30 to Nov. 1

November

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 5

Georgia Textile Operating Executives, fall meeting, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Nov. 8

Textile Seminar, sponsored by University of Georgia, Div. of Clothing and Textiles in Extension, Teaching, Research, Georgia Center for Continuing Education, Athens, Ga., Nov. 7 & 8

Conference on Radiation and High-Temperature Behavior of Textiles, sponsored by the New York Academy of Sciences, Polytechnic Institute of Brooklyn, and U. S. Navy Clothing and Textile Research Laboratory, Hotel Barbizon Plaza, New York, N. Y., Nov. 14 & 15

Narrow Fabrics Institute, annual meeting, Hotel Roosevelt, New York, N. Y., Nov. 17 to 19

December

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 3

1959

January

Plant Maintenance & Engineering Show, Public Auditorium, Cleveland, Ohio, Jan. 26 to 29

March

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 19 to 21

April

The Fiber Society, Inc., spring meeting, Fontana Village, N. C., April 29 & 30

May

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., May 4 to 8

Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., May 5

Tufted Textile Manufacturers Association, annual convention, cruise to Nassau from Savannah, Ga., May 8 to 13

Cotton Research Clinic, sponsored by the National Cotton Council, Grove Park Inn, Asheville, N. C., May 12 to 14

June

Material Handling Institute's Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

1960

May

American Textile Machinery Exhibition, Atlantic City, N. J., May 23 to 27

PROGRESSIVE DRAFTING SYSTEM

(PATENTS PENDING)

ENTIRELY NEW **IN ENGINEERING CONCEPT, IN DESIGN, AND IN STANDARDS OF PERFORMANCE**

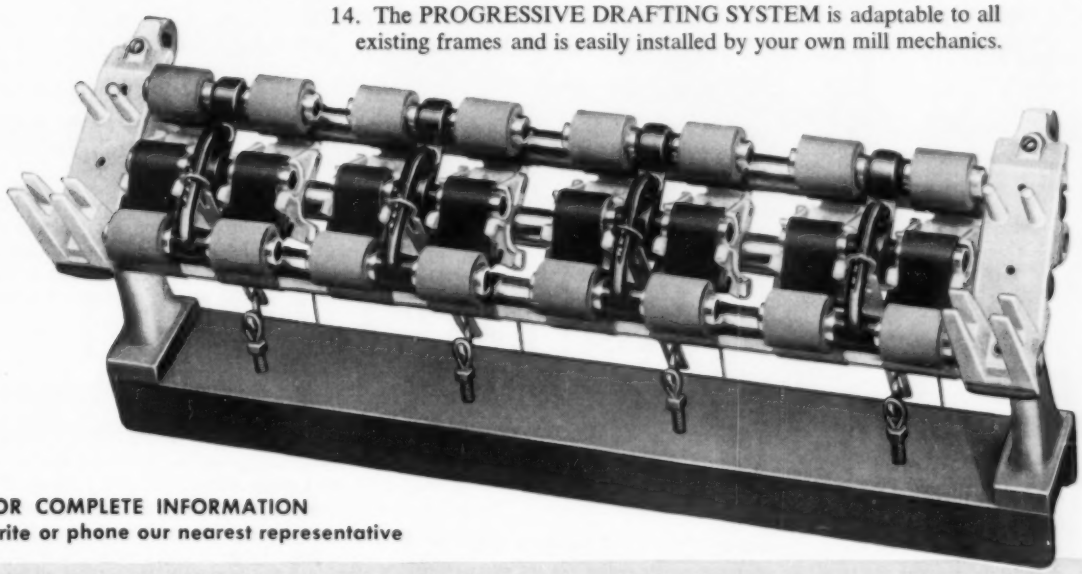
Completely Anti-Friction

NOW, a new, revolutionary, PROGRESSIVE Drafting System, for cleaner, stronger, more uniform yarn than ever before possible. It is the *only* system completely anti-friction. And PROGRESSIVE'S molded NY·PRO·LON CRADLE is the remarkable HEART of the System.

AT THE GREENVILLE SHOW BOOTH 128

CONSIDER:

1. No adjustments are ever required, not even after buffing of front top roll.
2. No wear from cradle on bottom rolls or on gudgeons of knurled top rolls.
3. Eliminates all cap bars.
4. No soiled aprons or soiled yarn.
5. Positive alignments, positive settings of aprons and of top rolls are a constant, with absolute uniformity at all times.
6. Three PROGRESSIVE ball-bearing, anti-friction rolls.
7. PROGRESSIVE-engineered suspension arm, an integral part of the front top roll.
8. Choice of three positive weight settings.
9. Front roll can be heavily weighted with no damage to its 8 ball bearings.
10. Constantly uniform pressure on middle and back rolls.
11. Ease of quick dismounting and reassembling of rolls.
12. Considerable savings in costs of both cots and aprons.
13. The ultimate of simplicity in design and a marvel of precision.
14. The PROGRESSIVE DRAFTING SYSTEM is adaptable to all existing frames and is easily installed by your own mill mechanics.



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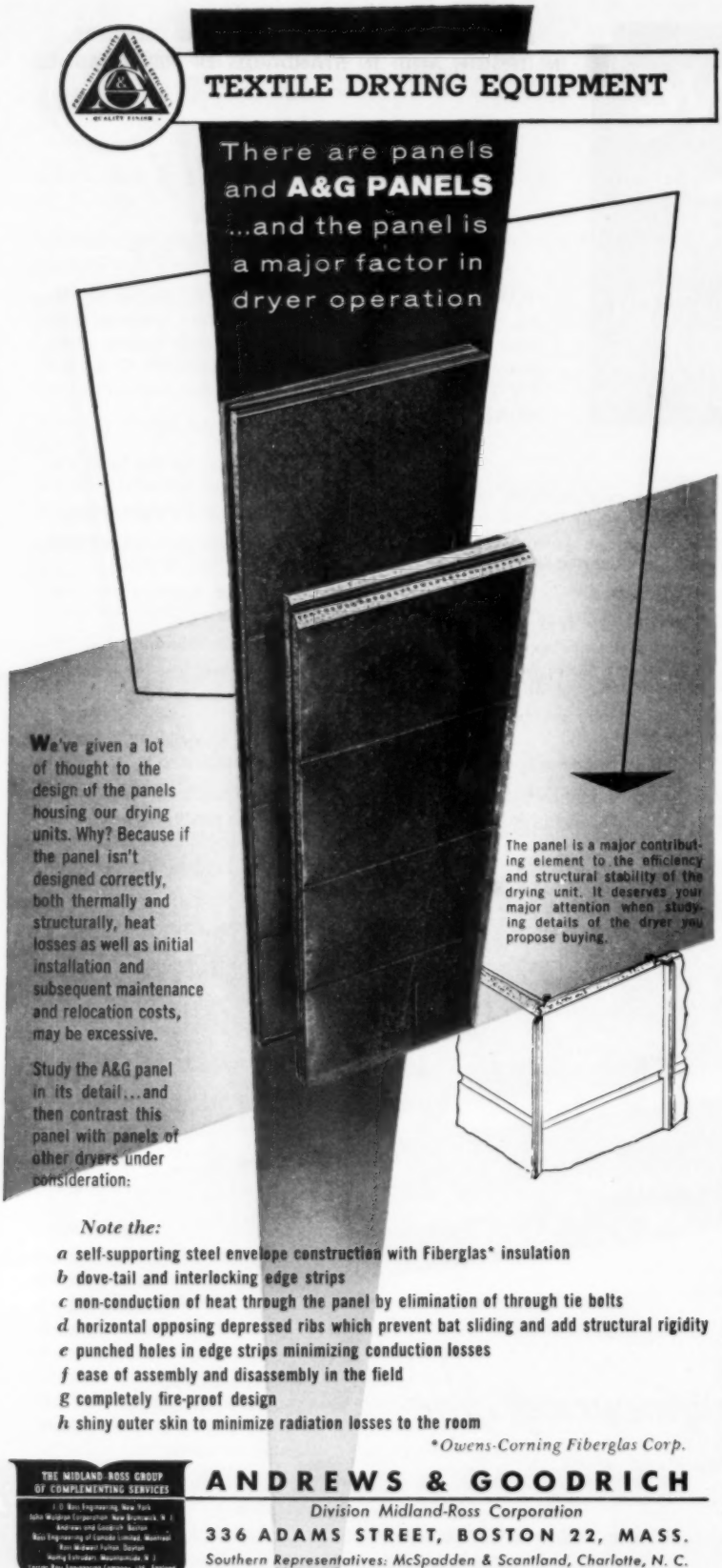
TEXTILE DRYING EQUIPMENT
There are panels and A&G PANELS ...and the panel is a major factor in dryer operation
We've given a lot of thought to the design of the panels housing our drying units. Why? Because if the panel isn't designed correctly, both thermally and structurally, heat losses as well as initial installation and subsequent maintenance and relocation costs, may be excessive.
Study the A&G panel in its detail...and then contrast this panel with panels of other dryers under consideration:
The panel is a major contributing element to the efficiency and structural stability of the drying unit. It deserves your major attention when studying details of the dryer you propose buying.
Note the:
a self-supporting steel envelope construction with Fiberglas* insulation
b dove-tail and interlocking edge strips
c non-conduction of heat through the panel by elimination of through tie bolts
d horizontal opposing depressed ribs which prevent bat sliding and add structural rigidity
e punched holes in edge strips minimizing conduction losses
f ease of assembly and disassembly in the field
g completely fire-proof design
h shiny outer skin to minimize radiation losses to the room
*Owens-Corning Fiberglas Corp.
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Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinion appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

ONE MAN'S KNOT IS NOT ANOTHER MAN'S KNOT

Dear Editor:

You must have had a few letters about Kink No. K-3569 [TEXTILE WORLD, July, '58, p. 94], and I'd like to add my protest.

The so-called weaver's knot illustrated in the Kink would be a slip knot in our carpet mill. Both ends of the dark-colored pipe cleaner should be on the outside of the light-colored pipe cleaner.

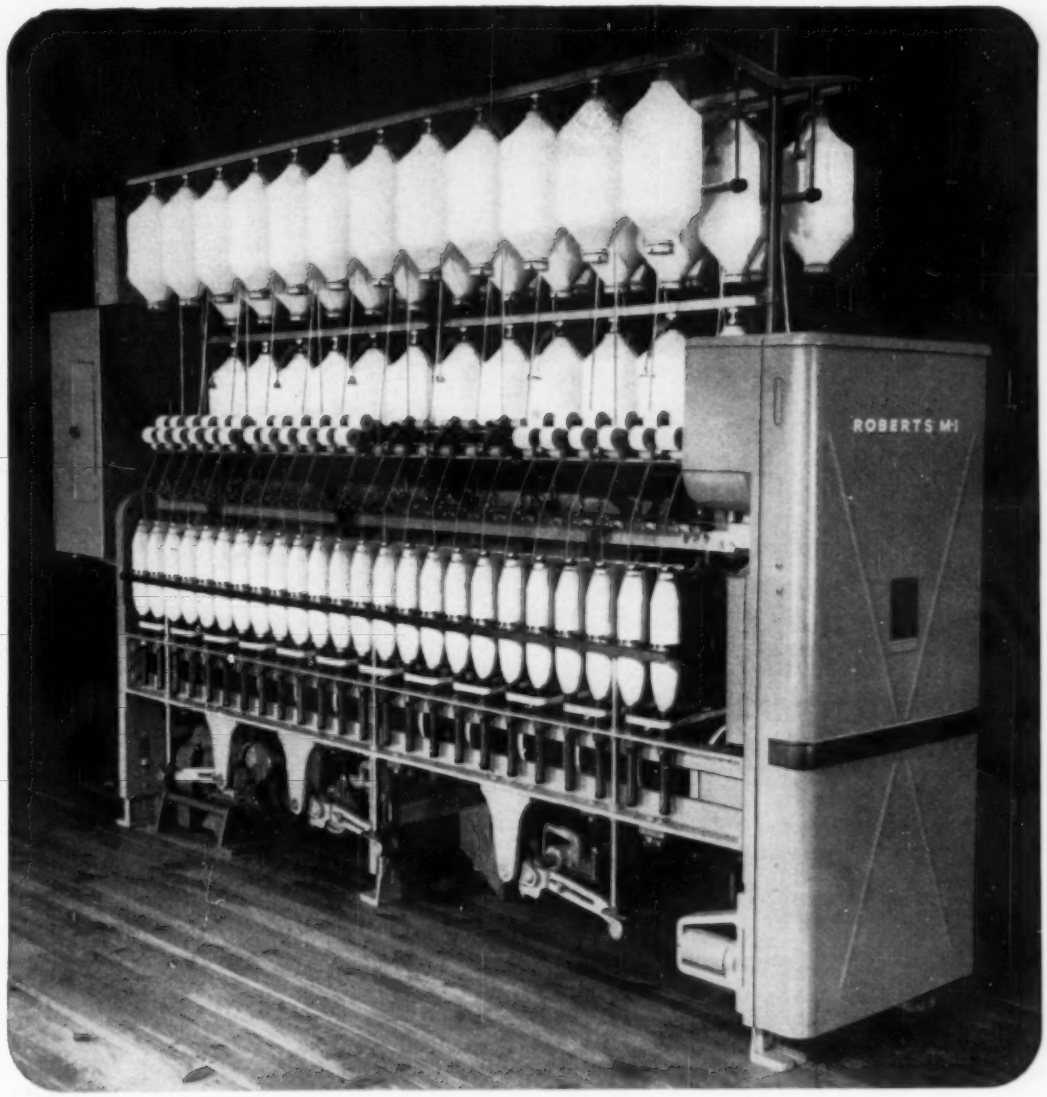
A. M. DUNNE
Thompsonville, Conn.

[Cotton-mill practice favors the knot shown in the diagram. The knot described above is known as a square knot in some mills and is not as fast to tie as the weaver's knot.—EDITOR]

PRICE BRACKETS ARE EVIL

I have read the report "What's Happening in the Knitting Business" [TEXTILE WORLD, April, '58, p. 59] and am particularly interested in your references to the effect of price bracketing. I agree with your views that price bracketing is an evil of the textile industry in general and that it has contributed to depressed quality and profits. I believe you will find many others of the same opinion.

You state that cheaper yarns, dyes, and sewing threads are used and courses are reduced. We know that there is resistance toward the use of faster dyes that are only pennies per pound of fiber more costly than inferior dyes. The reason, manufacturers



ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

330 Roberts 25-inch Frames, with over 105,000 spindles, have been installed in American mills in the past two years. These Roberts Frames are very ruggedly built and exceptionally simple in design. Only tried and proven principles are used, which insure consistent high quality results.

Roberts M-1 Frames produce better yarns at higher front roll speeds and put more ounces of yarn on the bobbin. The ball bearing construction provides smoother operation plus reduced power use. Changes in draft, twist, lay, or speed are made very simply. Roberts M-1 Frames are available in 25-, 36- and 39-inch widths, for cotton, synthetics, worsted or blends, in short or long fiber lengths.

The benefits of big package spinning are available at

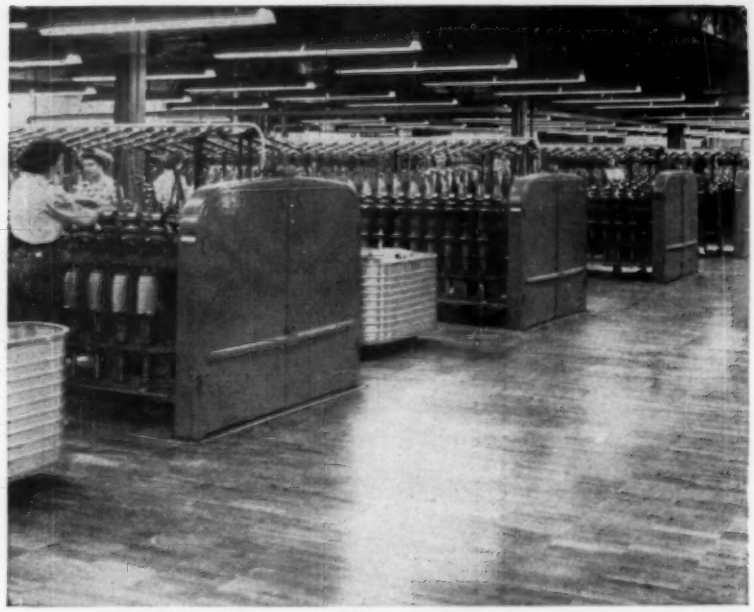
$32 to $40 per spindle

including freight and installation

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

For more data, circle A-5 on Reader Service Card



DIRT-RESISTANT Tennantized floor allows faster sweeping. Saves manhours.

Why most money-making mills have TENNANT-maintained floors

Mills that make money *today* usually know their maintenance costs to a penny.

That's why about 9 out of 10 successful mills, large and small, use the TENNANT SYSTEM of Floor Maintenance.

They know, from their own cost records, that this system provides clean, bright floors *at the lowest cost per sq. ft. of any floor maintenance method* available today. Here's why:

SAVES MANHOURS—*Tennantized* floors have 3 times the dirt resistance of most textile floors. Saves cleaning time, cuts sweeping costs, etc.

How the TENNANT SYSTEM cuts floor care costs...

1 **SAVES TIME.** Dirt is easily wiped off surface.

2 **SAVES FLOOR SEAL.** Tennantized floors seldom need refinishing.

3 **SAVES BUFFING.** New method brightens floor; cuts buffing time as much as 80%.

REQUIRES LESS FLOOR SEAL—New custom-fitted TENNANT seals *last longer than any comparable materials we know of.* Cuts annual seal costs and recoating expense. WRITE TODAY *for full details. G. H. Tennant Co., 737-L N. Lilac Drive, Minneapolis 22, Minn.*

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

say, is "we have to meet a bracket."

What is behind price bracketing? Why is it continued when so many people in the textile and garment industries realize how it shackles so many good things that could be done? Does it really hold profits down? If so, why don't the mills realize that they are entitled to make a profit on their operations, which they could do if they did not stress the pricing angle so strongly?

The cost for vat dyes in a pair of socks that would not bleed onto white goods in a family wash is only a fraction of a penny more than the inferior dyes that are usually used. Any woman would gladly pay the extra pennies needed for vat-dyed socks, for example, if she could get them.

J. H. M.

Wilmington, Del.

ITALIANS CONSERVE KNITTED-FABRIC ELASTICITY

Dear Editor:

We saw the answer to your Question 1362 about conserving the elasticity of tubular cotton knitted fabrics in the March issue of TEXTILE WORLD.

We have a more satisfactory solution to the problem with a patented process that is accepted on the Italian market with complete satisfaction and assures permanent conservation of elasticity even after washing.

Tintoria Milano di Cozzi & C.S.P.A. Milan is applying the process with complete satisfaction and excellent results.

DR. CARLO PESARO
ENG. ALFREDO COZZI

Milan, Italy

J. SPENCER LOVE'S SPEECH

Dear Editor:

With regard to J. Spencer Love's speech on the challenging and dynamic textile industry [TEXTILE WORLD, July, '58, p. 47] I don't understand why you didn't mention the fact that the speech was made at the commencement exercises of the Philadelphia Textile Institute when Mr. Love received an honorary doctor's degree.

After all, if Mr. Love hadn't been invited to speak on this occasion, his thoughts regarding the textile industry and its opportunities might not have been made available to us.

WILLIAM ZIMMERMAN

Philadelphia, Pa.

Assistant Vice-President Stanley T. Davison, officer in charge, supervised modernization program.

Today... GOLD MEDAL Services

Move Into a New Setting at 29th Street and 4th Avenue

For 45 years this office has provided a full range of banking services to this business and residential community.

Now, in a completely modernized office, we introduce a new era of service to our customers and friends. Our equipment, counters, air conditioning, lighting and furnishings are all new—for your greater comfort and convenience and our greater efficiency in serving you.

The staff at our 29th Street Office is under the direction of Stanley T. Davison, Assistant Vice-President, a man who began his banking career in this area and is fully alert to the banking needs of the neighborhood.

You are cordially invited to come in today and make use of this newly modernized office. Our Gold Medal symbol is your assurance of prompt and considerate attention from experienced and understanding people.

CHEMICAL
CORN EXCHANGE
BANK
Founded 1824

THE BANK THAT'S NEAR
YOU IN GREATER NEW YORK

For more data, circle A-7 on Reader Service Card

First introduced in 1928...

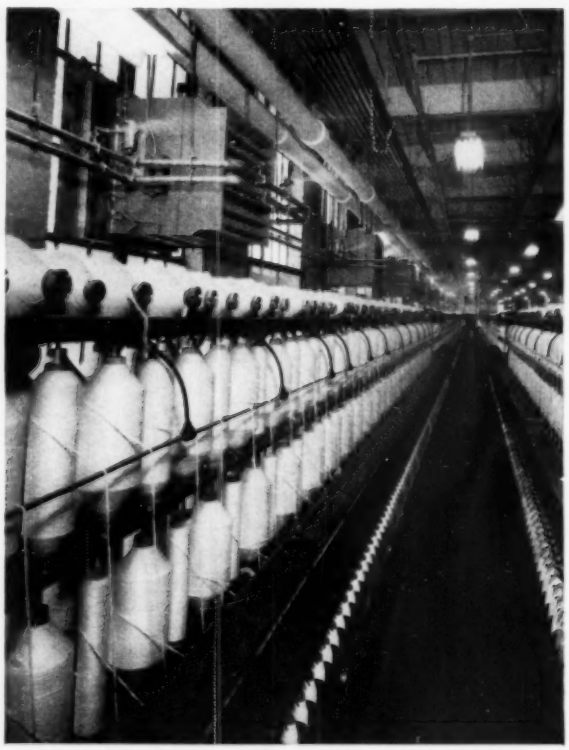
1928 was a banner year! That was the year Cannon Mills Company brought out its now-famous "towel ensemble" . . . announced *colored* hand and bath towels for the first time, as well. It was back in 1928, too, that Cannon also insured *finer* product quality with another innovation . . . AMCO Humidification.

In the 30 years since then, as Cannon has diversified its product line and added new manufacturing facilities, American Moistening Company has continued to work closely with Cannon in the installation of *carefully engineered* Amco Air Conditioning Systems.

Amco, of course, designs all types of systems — humidification; humidification in combination with cooling, as in a ductless evaporative cooling system; unit dry-duct systems; or central station air conditioning.

For expert advice, backed by many years of textile air conditioning experience, let an Amco engineer suggest a solution to *your* particular air conditioning problem. Naturally, there's no obligation.

Amco No. 6 Atomizer, one of many quality Amco components, produces an exceptionally fine, smoke-like spray. Its better performance and ease of maintenance make it a superior, automatically self-cleaning atomizer both for new installations and for replacements.



Amco ductless system of humidifying, cooling and ventilating installation in spinning room at Cannon Mills plant in Kannapolis, N. C.

AMCO

SINCE 1888

AIR CONDITIONING EQUIPMENT

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA

BRANCHES: ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, ONTARIO

For more data, circle A-8 on Reader Service Card

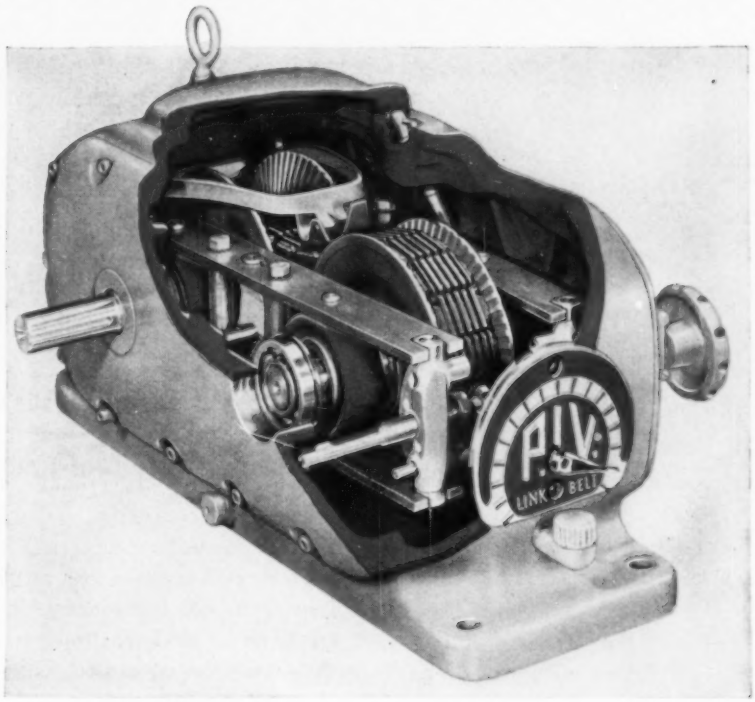
LINK-BELT P.I.V. means positive, infinitely variable speed control

Where modern production machines and operations demand extremely accurate transmission of power with variable speed control, no other variable speed drive can match the efficiency of the Link-Belt P.I.V. Here's how it works.

Because it employs an exclusive metal, self-tooth-forming chain, Link-Belt P.I.V. permits instant and accurate speed changing without perceptible loss of speed—regardless of load. And the variation can be accomplished without stopping the driven machine.

A mere turn of the control screw simultaneously varies effective diameters of conical wheels located on the input and output shafts. In turn, these radially grooved wheels mesh with the self-tooth-forming chain assuring positive selection of speed.

Call your nearby L-B office or authorized stock-carrying distributor for Book 2274.

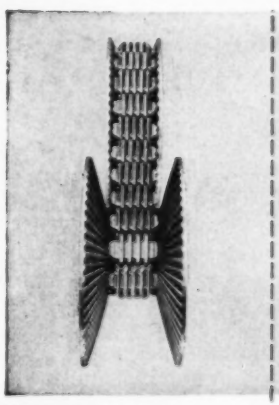


LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

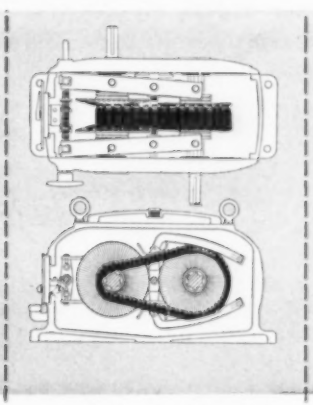
14,318

LONG-LIFE ACCURACY and application flexibility of Link-Belt P.I.V. are unmatched by any other variable speed drive. It's available in 8 sizes and 16 standard types, in capacities from ½ to 25 hp—for horizontal or vertical mounting. Compact design simplifies installation as a separate unit or a built-in part of a machine. Even greater application flexibility can be gained by making motor and helical gear sets integral parts of the P.I.V. Of all-metal construction, P.I.V. is totally enclosed, automatically lubricated.

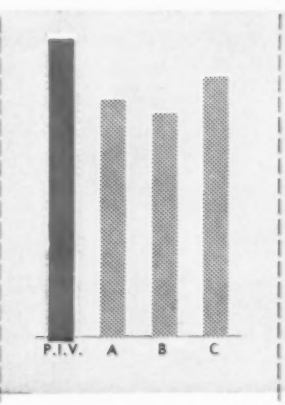
How LINK-BELT P.I.V. differs from other variable speed drives



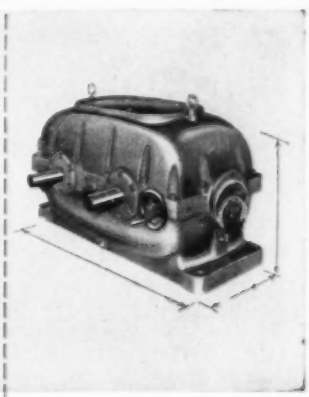
POSITIVE MESH of self tooth-forming chain with grooved wheels assures full-rated hp at output shaft. All-metal construction . . .



PREVENTS SLIPPAGE because the P.I.V. drive chain does not depend on friction and is unaffected by atmospheric conditions.



UNMATCHED ACCURACY is demonstrated by this actual comparison of maintained rpm of P.I.V. and three other variable speed drives.



GREATER COMPACTNESS results from short-center arrangement of drive mechanism. Some P.I.V. models save 50% on floor space.

For more data, circle A-9 on Reader Service Card

Announcing the New Dayton

Golden Thorobred Drop Box Picker

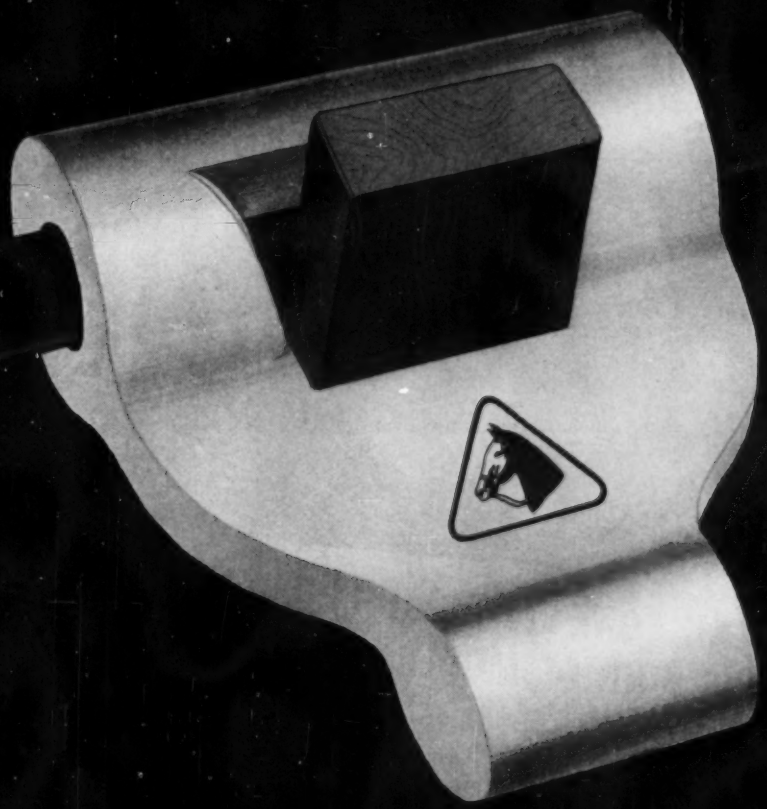
Amazing Synthetic Picker Lasts Up to 10 Times Longer, Multiplies Loom Savings!

You can now enjoy tremendous savings in loom downtime and picker replacement cost, with *new* Dayton-made Golden Thorobred Drop Box Pickers. During long, thorough testing, Golden Thorobred Drop Box Pickers have operated up to 10 times longer than conventional pickers, and in many cases are still running.

Furthermore, Golden Thorobreds require no oils or dressing . . . they won't abrade the picker stick, thereby extending its life . . . and they have an almost perfect cushioning action that preserves the shuttle from wear.

Because of their shock-absorbing resilience, Golden Thorobreds, too, help greatly to diminish the noise level on looms. And when a changeover does become necessary, Golden Thorobreds box with notable ease . . . for your further savings in labor and downtime.

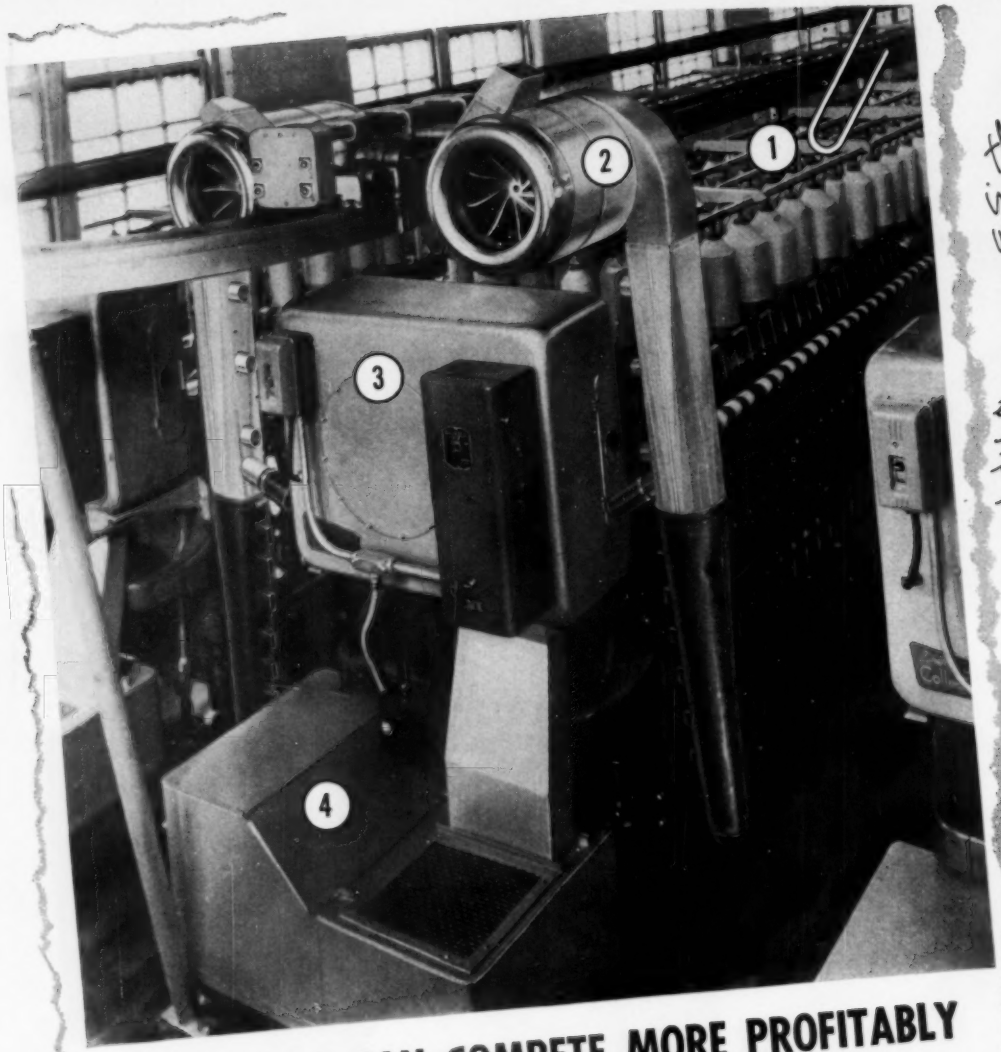
Cleaner, cooler, quieter, longer running . . . Dayton Golden Thorobred Drop Box Pickers assure you outstanding performance and remarkable savings. Enjoy these new, high standards of wear-resistant operation . . . the result of six years of Dayton research and testing in synthetic elastomers. Golden Thorobreds are now available at your local Dayton jobber's . . . or write The Dayton Rubber Company, Textile Division, 401 South Carolina National Bank Building, Greenville, S. C.



Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

OVERSEAS PLANT, THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND



J.V. this looks interesting- what do you think Bill

Bill- certainly think now is the time to look into it. J.V.

Let's check with Bahnson right away - ask for more details on the equipment. Bill

YOUR MILL CAN COMPETE MORE PROFITABLY WITH THIS KIND OF MODERNIZATION

Note the spinning frame in the picture. It has been modernized with specialized *all Bahnson* equipment. The resulting benefit is a greatly improved competitive position for this mill through substantial annual savings on direct labor costs and increased production of a better quality product. Co-ordinated modernization with one source added initial savings, too.

In the modernization of this spinning room Bahnson co-ordinated the installation of the following specialized equipment, numbered in the illustration:

1. **Bahnson OPEN-AIRE CREEL, the only open creel made of rugged steel with baked enamel finish.**
2. **Bahnson CROSS-JET CLEANER for cleaning entire frame in addition to walls and ceilings.**
3. **Bahnson COLLECTO-VAC for uniform collection of ends, lint, and fly through warp-free aluminum flutes.**
4. **Bahnson CENTRAL HEAT REMOVAL to take out heat from collection units and motor alley.**

Bahnson representatives will be pleased to explain the application of this kind of modernization to your individual mill need. Write or call Bahnson today. No obligation.

Bahnson
COMPANY
WINSTON-SALEM, N. C., U. S. A.

Air Conditioning **Central Heat Removal** **Creels**
Vacuum Collection **Cleaning**

For more data, circle A-11 on Reader Service Card

the Whitin SUPER J* COMBER gives you...

Higher Production

Greater Nep Removal

Unsurpassed Sliver Quality

Lowest Maintenance and Operating Costs

The latest model Super J Comber combines even higher production (up to 52 lbs. per hour) with exceptionally efficient nep removal. Operating smoothly at 150 nips per minute, its many special construction features have won enthusiastic praise from users in every combing center in the world.

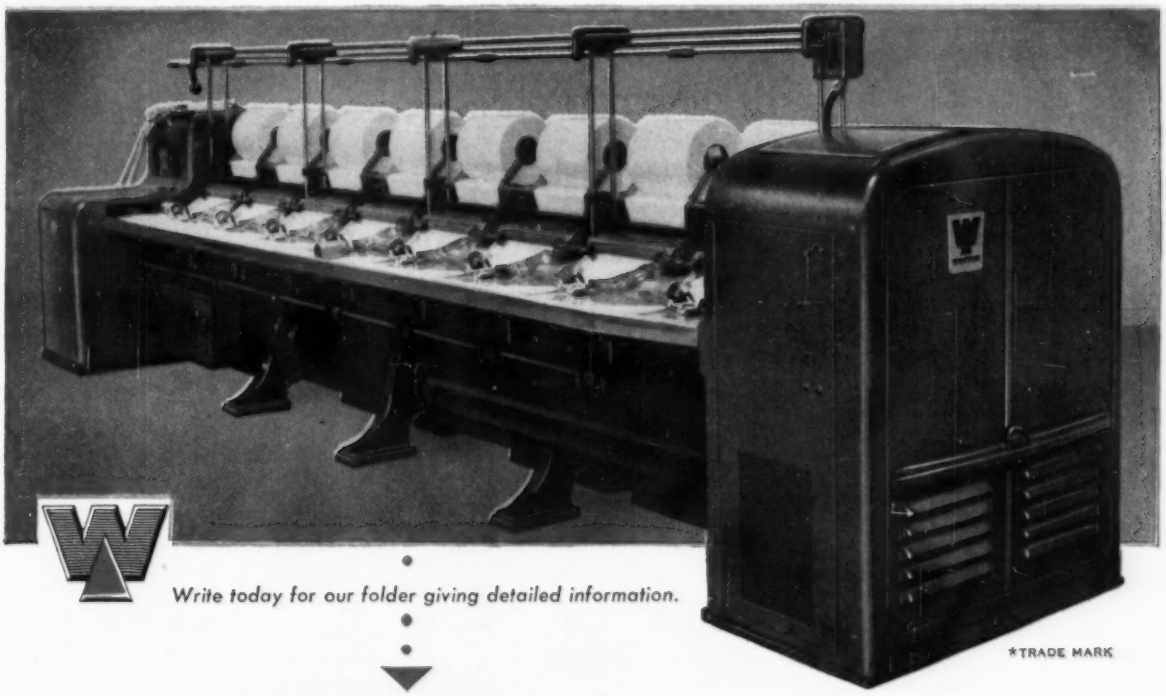
With the Super J, extremely even sliver of finest quality is produced, settings are very accurately held and waste removal is precise. Because it has up to 50% fewer parts than other combers, its maintenance cost is very low. To get maximum production at lowest cost per pound, your best buy is the Whitin Super J!

• SPECIAL FEATURES •

- 8 heads, single side.
- Very precise construction.
- 50% fewer parts than competitive combers.
- Improved sliver quality from new nipper assembly, heavier detaching rolls and weighting.
- Efficiency up to 97%.
- Maintains settings between annual overhauls.
- Simple setting, timing and waste control adjustments.
- Exceptionally low maintenance costs.
- Easy to operate.

PRODUCTION — POUNDS PER HOUR AT 100% EFFICIENCY
Taking Out 10% Waste

FEED RATCHET	LAP WEIGHT — GRAINS PER YARD			
	700	800	900	1000
13	37	42.2	47.5	52.7
14	34.4	39.2	44.2	49
15	32.1	36.7	41.3	45.8



Write today for our folder giving detailed information.

*TRADE MARK

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

For more data, circle A-12 on Reader Service Card

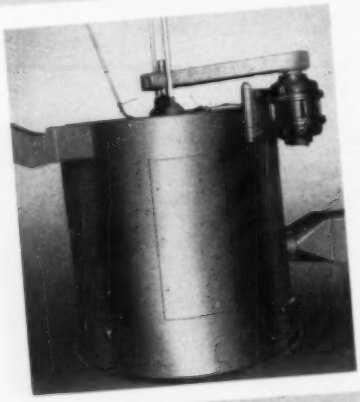
"EXTRA CLEAN" the poor cotton crop with SACO-LOWELL OPENING AND CLEANING

No. 15 OPENER WITH F-7 FEEDER

The No. 15 Opener removes heavy trash — sand, grass, sticks, and larger pieces of leaf and boll. This eases the cleaning load for the rest of the Opening Line; prevents forming more pepper trash.

No. 12 LATTICE OPENER AND CLEANER

The No. 12 is particularly efficient in opening any remaining clumps of stock. The beater and grid bars then remove this released trash. The No. 12 Lattice Opener is the most efficient opening and cleaning machine.

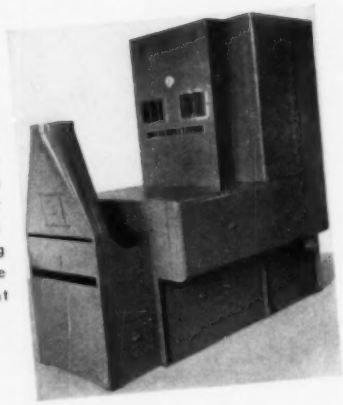


VERTICAL OPENER

The Vertical Opener takes out both heavy and lighter waste. It is especially suited for the currently poor cotton crop.

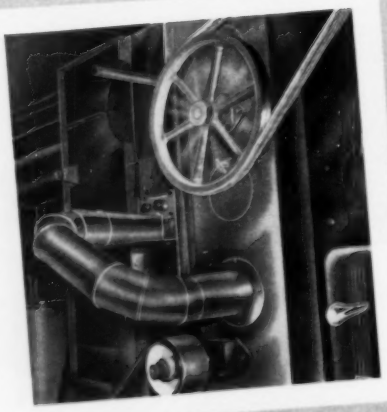
No. 16 OPENER

The No. 16 Opener cleans through "pin combing", separating stock to almost a fiber to fiber state. The grid bars and revolving grids remove a large percentage of light trash still present.



THE No. 11 DUST AND WASTE EXTRACTOR

The No. 11 Dust and Waste Extractor with our New Automatic Cleaning Attachment increases the cleaning efficiency of the No. 11 over 30 per cent. The New Automatic Cleaner gives extra cleaning needed in running the poor cotton crop without any additional beating.



CONTACT YOUR NEAREST SACO-LOWELL OFFICE FOR AN OPENING ROOM MODERNIZATION PROGRAM INDIVIDUALLY PLANNED TO YOUR REQUIREMENTS

SACO-LOWELL SHOPS

EXECUTIVE OFFICES: 60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops: BIDDEFORD, ME., SACO, ME., SANFORD, N. C., EASLEY, S. C.
Sales Offices: ATLANTA, GA., CHARLOTTE, N. C., DETROIT, MICH., GREENSBORO, N. C., GREENVILLE, S. C., TORONTO, CANADA

For more data, circle A-13 on Reader Service Card

Colors come to life with National® Dyes!

Colors that *live* are colors that *sell!*

To help you bring colors to life, we supply a diversified range of carefully standardized dyes for all fibers . . . plus the well-qualified assistance of experienced technical men and conveniently located service laboratories . . . plus basic research to develop new dyes and constantly improve the properties of established lines.

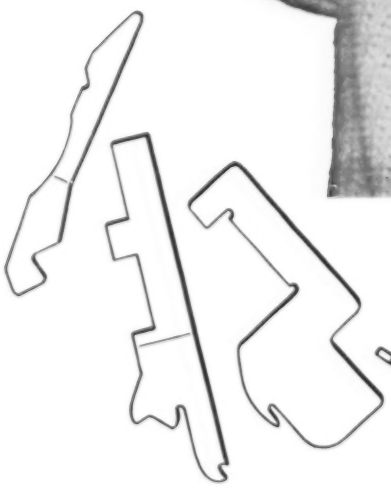
These essential services are part of the bonus you enjoy when you do business with National Aniline.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence San Francisco

Allied Chemical



I *increase*
V *value*
E *end*
S *seconds*

For quality and performance . . .
IVES springbeard needle and
knitting parts are the answer.
Prompt deliveries assured.
Write, wire or phone CHarter 9-0396-7
The Loyal T. IVES Company, Inc.
New Brunswick, N.J.

ND FACTS

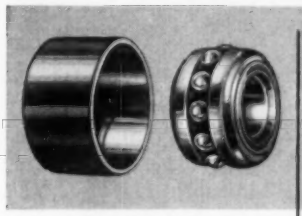
HERE'S NEW DEPARTURE'S COMPLETE LINE OF SEALED BALL BEARINGS FOR TEXTILE MACHINERY

New Departure textile bearings are made with integral closures to prevent leakage of lubricant and contamination of goods. All are smooth running, low friction ball bearings permitting higher speeds for faster production—longer service life.

Many are lubricated and sealed for life. Others use New Departure's Injection-Relubrication system. This permits revitalization of bearing lubricant for increased bearing life.

Write for full information on New Departure textile ball bearings, or call your New Departure sales engineer. Naturally, there's no obligation.

SEND FOR TEXTILE BALL-BEARING CATALOG TEX-1, NEW DEPARTURE, BRISTOL, CONN.

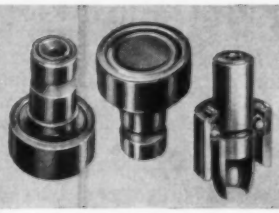


SPINDLE BEARINGS

. . . Cylindrical outer race permits removal of spindle from bolster without removing bolster from rail. Used for step bearings, but also used in high-speed spindle applications.

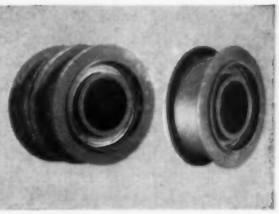
TREADLE ROLL BEARINGS

. . . permanently lubricated for long service. Designed to eliminate sparking. Double seals prevent leakage of lubricant, keep out dirt and lint.



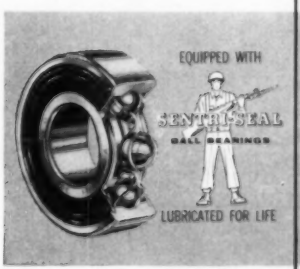
TENSION PULLEY BEARINGS

. . . available for both vertical mounting of idler or tension pulleys or horizontal mounting of tape tension pulleys.



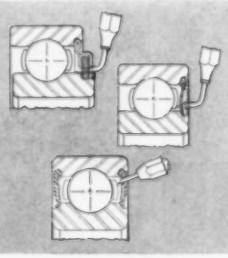
SHEAVE BEARINGS

. . . for automatic looms. Self-sealing assures protection for textiles, eliminates relubrication problem. Designed to permit nesting in gangs on harness sheave supporting shaft.



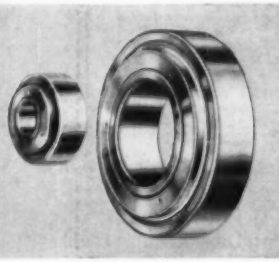
SENTRI-SEALS

. . . keep lubricant *in*, seal *out* dust, dirt and moisture for life. Sentri-Seals are synthetic rubber with spring steel rings molded in. Available in a wide variety of ball bearings.



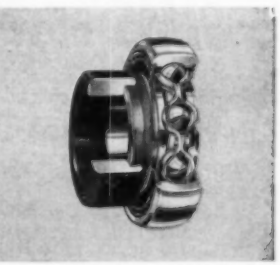
INJECTION-RELUBRICATION SYSTEM

Hollow needle and metering oiler extend grease life in bearings for many months in high-speed, long-service applications.



FELT SEAL

. . . annular ball bearings are protected from dirt, retain lubricant by integral felt closures. Complete line from 5mm. to 2¾" bore. Relubricated by injection-relubrication.



ADAPTER BEARINGS

. . . easily applied to shafts; positive lock. Pre-lubricated, sealed. For moderate loads and speeds. Spherical or cylindrical O.D. for shafts ½" to 2 7/16" dia.

1908–1958 GM FORWARD FROM FIFTY

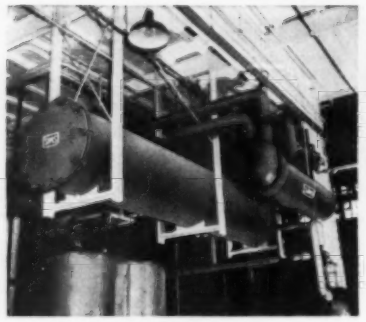
ND NEW DEPARTURE

DIVISION OF GENERAL MOTORS, BRISTOL, CONN.

NOTHING ROLLS LIKE A BALL

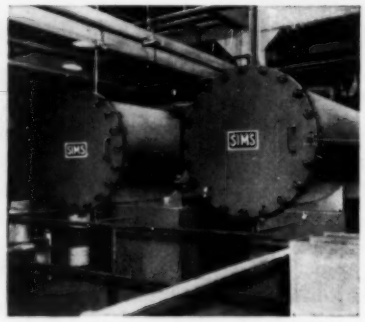
For more data, circle A-16 on Reader Service Card

These 3 FINISHING PLANTS save money with SIMS EXCHANGERS



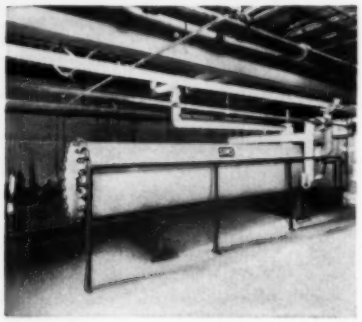
at Pepperell, Ala.

6 large Sims Textile type Heat Exchangers serve bleaching and dyeing ranges and mercerizer. Each waste water exchanger is connected to a Sims booster exchanger using steam to raise temperature of water. Typical of all, is the operation of one, on the dye range, fresh cold water introduced at 72°F. is raised to 136°F. The 6 Sims Exchangers were equivalent to an added 40,000 lbs./hr. boiler.



at Granitville, S.C.

2 very large Sims Textile type Heat Exchangers are fed from a hot waste water collecting tank. An average of 50,000 gallons per hour of incoming fresh water gains 42°F. passing through the exchangers. These 2 Sims Exchangers are floor mounted and serve dyeing ranges and mercerizer to convert waste hot water into usable hot water.



at Clevedale, S.C.

One of 3 Sims Textile type Heat Exchangers serves a mercerizing department. About 250,000 gals. per day of waste water at 175 to 180°F. are passed through this exchanger. Incoming fresh water at 77°F. gained 35°F. at a flow of 172 gallons per minute. Savings on a 24 hour basis amounted to 83,062,500 B.T.U.'s. The 2 other Sims Exchangers operate on bleaching ranges.

Why it's routine to keep a SIMS clean - - -

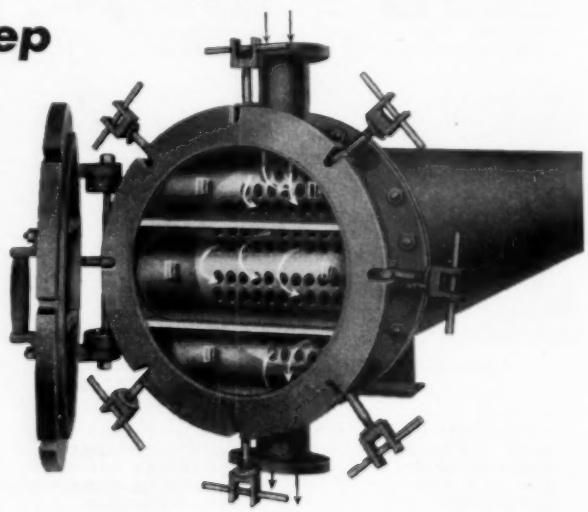
Swinging doors at each end open wide to expose full length of straight-thru 1¼" diameter tubes.

In 30 to 60 minutes a Sims Exchanger can be clean as a hound's tooth and back on the line.

You can be sure a Sims is clean, for you can see it.

There are scores of installations by Sims of Erie in the South for you to see first hand.

Ask for Bulletin TE-4.



THE SIMS CO.

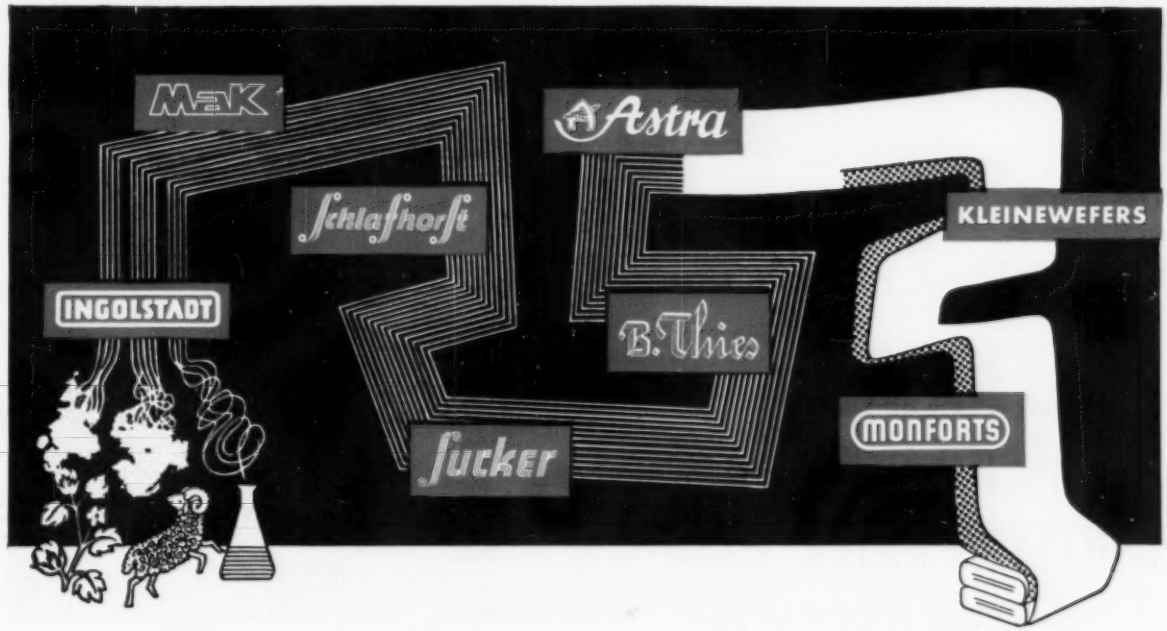
Manufacturers of Exhaust Gas Boilers • Storage Water Heaters • Heat Exchangers • Feed Water Heaters • Steam Separators

SIMS SINCE 1886

Erie, Pennsylvania

• Quenching Oil Coolers • Oil Heaters • Caustic Soda Recovery Equipment • Commercial type Instantaneous Water Heaters.

For more data, circle A-17 on Reader Service Card



From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
MAK Card Sets · Self-acting Mules · Ring spinning Frames
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"NATIONAL" PERFORATED APRON CONVEYOR DRYER

For Synthetic Fibres

Evidence of the outstanding efficiency and economy of this "National" drying unit is found in the number of existing and on-order installations among the Nation's leading chemical manufacturers.

Increased drying capacity per square foot of surface; improved uniformity of dried product; much easier apron cleaning; greater efficiency and accessibility of gas or steam heaters; and a generally neater machine to operate and maintain, are characteristics of this drying system resulting from unique and exclusive features of "National" design, construction, operation and control.

The same type of dryer is used for the drying of starch, rubber crumb and a wide variety of chemicals and pharmaceuticals.

The following well-known companies are among the current users of "National" Perforated Apron Conveyor Dryers:

AMERICAN VISCOSE CORPORATION

ARMOUR & COMPANY

DU PONT COMPANY OF CANADA (1956) LTD.

E. I. du PONT de NEMOURS & CO.

AMERICAN ENKA CORP.

NATIONAL ANILINE DIVISION, ALLIED CHEMICAL & DYE CORP.

CANADIAN INDUSTRIES, LTD.

THE DOW CHEMICAL CORP.

CHEMSTRAND CORP.

UNION CARBIDE & CARBON CORP.

Write for Literature Describing These "National" Dryers and Typical Installations.

THE NATIONAL® DRYING MACHINERY COMPANY

LEHIGH AVE. and HANCOCK ST., PHILADELPHIA 33, PA.

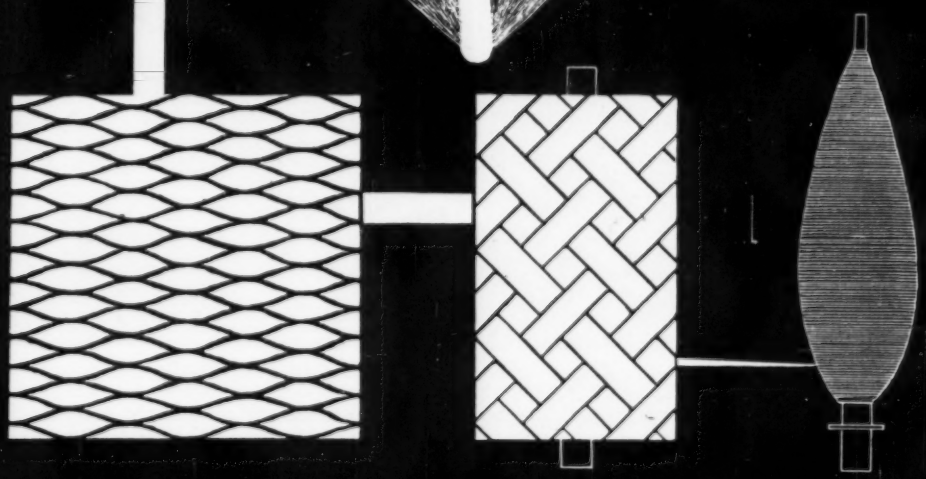
New England Agent: JONES & HUNT, INC., Gloucester, Mass. • *Southern Agent:* F. W. WARRINGTON, Charlotte, N. C.
Cable Address: "NADRYMA"—W. U. Code

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT / Donau

INGOLSTADT

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD



SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE · WORSTED

Planning and supply of complete spinning plants based

on latest experience in spinning technology and mechanical engineering

Spares for spinning machinery · Conversions of draft systems

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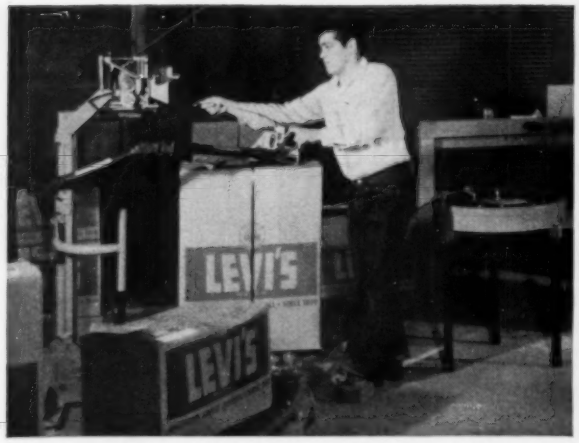
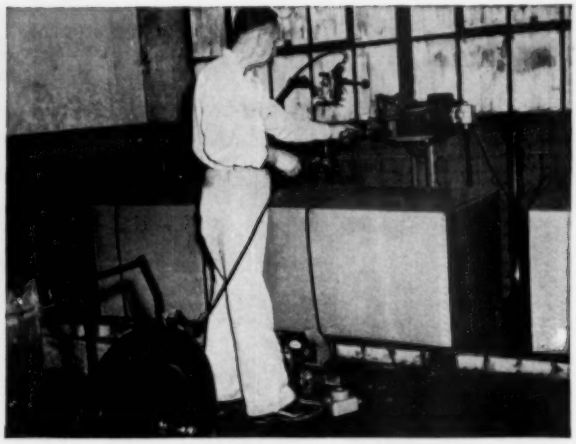
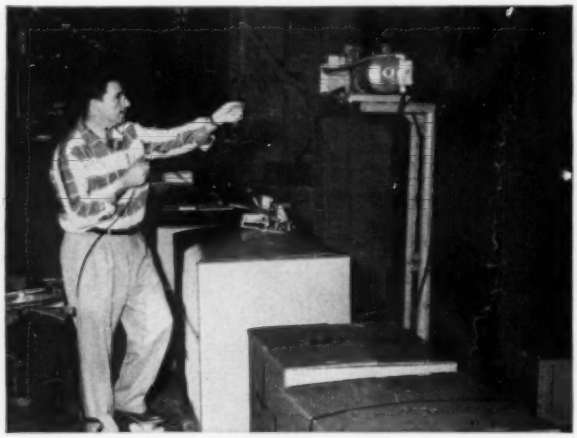


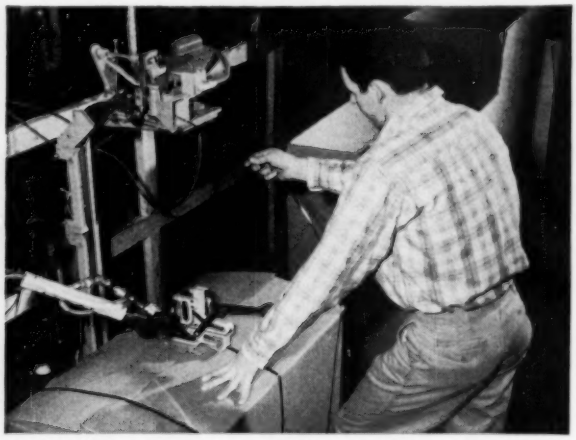
TROUSERS—One man works two conveyorized strapping stations...easily straps and weighs 440 cartons of various sizes per day, using Signode power strap feeders and Model A hand operated strapping tools. Production increased, and savings of 55% reported.



THREAD AND YARN—One man easily straps 300 cartons per day, four straps per carton, with a Signode power strap feeder and a Model AP air powered strapping tool. Operator has time for other duties. Two men were formerly assigned to carton strapping.



CHENILLES—One man straps 400 cartons per day. Cartons vary widely in size and weight. The operator has time for other duties, although two men formerly were needed. Signode power strap feeder and a Signode Model A tool are used.



FINISHED PRINT GOODS—One man straps 500 cartons a day, three straps per carton, using a Signode power strap feeder and a Model AP air powered strapping tool. Cartons vary greatly in size. Production has been more than doubled.

New low cost Signode power strap feeder a real money saver on textile packages

The power strap feeder is an independent, motorized, foot-pedal operated device for putting strap around big packages. It saves walking around...saves standing around...saves enough to pay for itself in short order. For more information, call the Signode man near you, or write to Signode for "Power Strap Feeder" folder. See this equipment in action at the Southern Textile Exposition.

SIGNODE

First in steel strapping

SIGNODE STEEL STRAPPING CO.

2642 N. Western Avenue, Chicago 47, Illinois

Textile specialists in Atlanta, Greenville, Charlotte, Birmingham, Richmond, Nashville, Chattanooga

In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

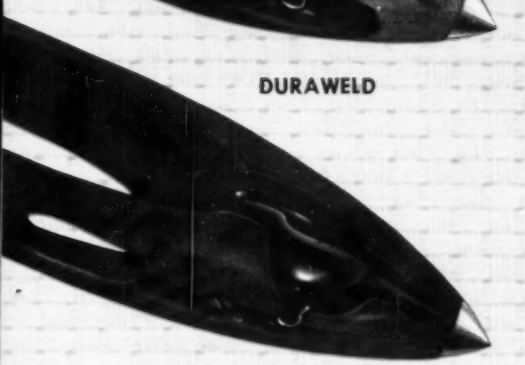
For more data, circle A-21 on Reader Service Card

For more data, circle A-35 on Reader Service Card →

TEMPERED DOGWOOD

DURAWOOD

DURAWELD



DURAMOLD

Southern Quality Shuttles

Cost Less In The Long Run

Southern Shuttles are the answer to demands by textile mill men for longer, trouble-free shuttle life and better quality weaving. Here are examples of Southern's Quality line.

TEMPERED DOGWOOD—The finest natural wood shuttles treated with Southern's exclusive tempering process, making them extremely tough, wear-resistant and stable.

DURAWOOD—Southern's Tempered Dogwood shuttles further improved by an exclusive process of compression under heat. They are longer lasting, fracture-resistant, and slightly denser. They provide 50% greater life expectancy at a very nominal additional cost.

DURAWELD—These shuttles offer 100% longer life expectancy with a very moderate weight increase. Greater strength is assured through use of tempered dogwood end blocks for resiliency and tip retention, permanently bonded by an exclusive Southern method to long wearing wall sections of laminated wood or plastic.

DURAMOLD—Made of Westinghouse Micarta, remarkably strong, grainless molded plastic. Duramold shuttles last 3 to 4 times longer than natural wood shuttles, require less maintenance, reduce down time and weave better cloth. These are absolutely the finest shuttles on the market today.

SOUTHERN has a complete line of shuttles for you to select from—any size, any shape, any type, for any loom. You name it—Southern has it. Many standard sizes are in stock for immediate delivery.

World's largest manufacturer of all type Shuttles. Comparison made them famous.

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PHILADELPHIA 32, PA.
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GREENVILLE, S.C.
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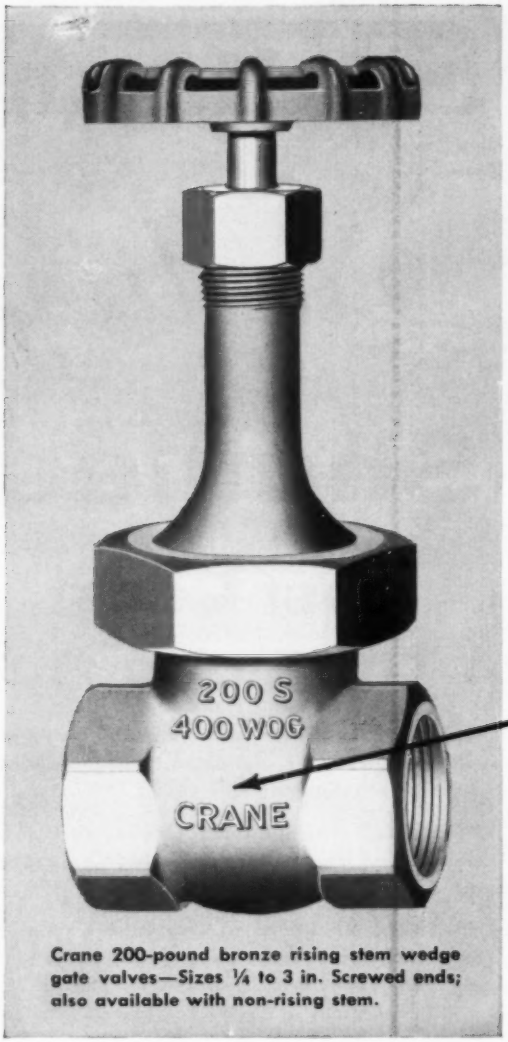
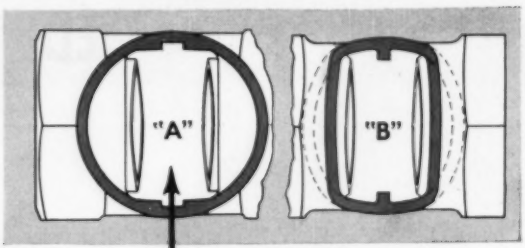
TEMPERED — QUALITY Stehedco CONTROL — STEHIDE

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.



Crane 200-pound bronze rising stem wedge gate valves—Sizes ¼ to 3 in. Screwed ends; also available with non-rising stem.

Crane cylindrical body design ("A") distributes pressure load uniformly, resists distortion, prevents possibility of seat leakage under higher pressures. In ordinary, rectangularly shaped bodies ("B"), stresses concentrate where walls have shortest radius. Leakage and early failure may result from excessive deflection, and rupture may occur.



HERE

CRANE adds new strength and safety to 200-Pound Bronze Gate Valves

Here is a bronze gate valve body design that provides essential strength where internal pressures are greatest . . . where line strains are most likely to concentrate.

And that's not all you get. The Exelloy seat rings are expanded into the body so that they can't loosen. There are wider hex ends which give easier, firmer wrench grip and resist distortion.

Another quality feature that Crane offers is the shoulder at the bottom of the threads in port ends to restrain the excessive entry of pipe that could cause damage to the valve seats.

You will find many uses for Crane 200-pound bronze gate valves in your plant—on steam, water, oil, gas, air, gasoline, light oils and volatile fluid lines.

For complete information about these new Crane bronze valves, see your local Crane Representative, or write to address below for Circular Ad-2285.

Send for Circular Ad-2285 today.

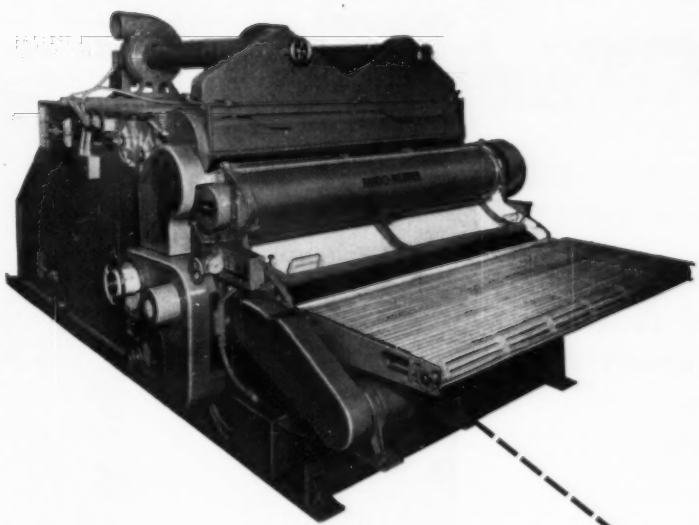
CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill.—Branches and Wholesalers Serving All Areas

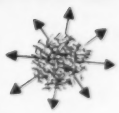
N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Broen, Chicago, Ill.

In the manufacture of Non-wovens, you get the MOST with RANDO-FEEDER® and RANDO-WEBBER®



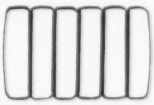
Available in 40", 60" and 84" widths

LOOK AT THESE ADVANTAGES:



Equal strength in all directions.

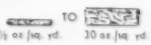
No waste—at least 98% fiber returned as web

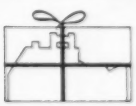


Low cost raw material

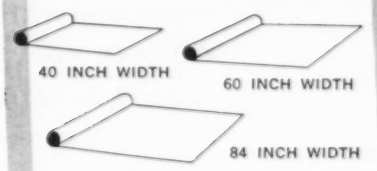
Stronger webs where delamination is diminished or eliminated. Normally entire web is formed in one layer.

Flexible—controlled with the turn of a knob.





Package unit ready to operate with all motors and guards included. Electrical, air, and water connections are all that is required.



3 models for producing random web with square, even selvages.

TEXTILE DIVISION
CURLATOR®
CORPORATION
EAST ROCHESTER, NEW YORK

WRITE for complete details in Bulletin No. 105. Inquiries invited.

EXPORT REPRESENTATIVES: Lendt & Company, 535 Fifth Ave., New York 17, N. Y.

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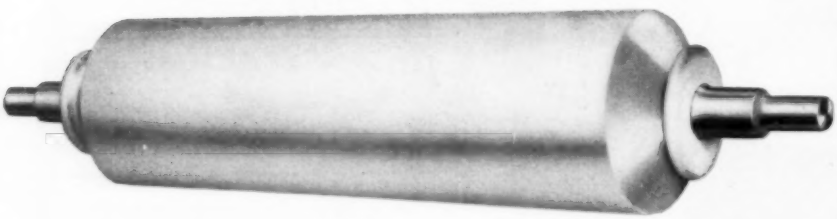
NOW! NEW MANHATTAN TEXTILE ROLLS

TEXTRACTOR ROLL

NEW crack-resistant cover and compounding methods extract *more* water . . . reduce crush on mangle roll!

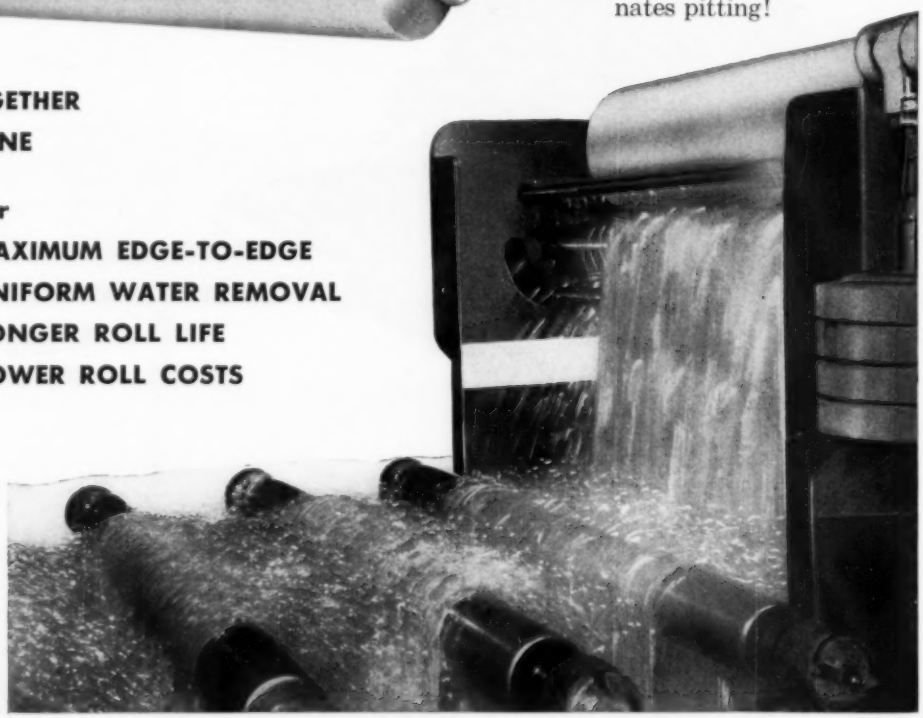
TEXROC ROLL



NEW hard white cover extracts up to *10% more water* than metal rolls . . . minimizes chemical and dye build-up and eliminates pitting!

BRING THEM TOGETHER
ON *YOUR* MACHINE

for
MAXIMUM EDGE-TO-EDGE
UNIFORM WATER REMOVAL
LONGER ROLL LIFE
LOWER ROLL COSTS



RM822

ROLL COVERING PLANTS AT PASSAIC, N. J. • NEENAH, WIS. • N. CHARLESTON, S. C.
BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

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For more data, circle A-25 on Reader Service Card

New word in finishing: Zefran®

zĕf-răn

(Zĕf-răn), n. 1.

Entirely new acrylic alloy fiber made exclusively by The Dow Chemical Company. Zefran makes the finishing of fabrics easier, and all but makes a loom finish a reality. 1. With high percentages of Zefran in a blend, minimum finishing is required to achieve dimensional stability. 2. With high percentages of Zefran in blends with rayon and cotton (and to a lesser extent with wool), minimum finishing is required to achieve a wide variety of desirable hands. 3. High percentages of Zefran blended with cotton require no resin finish to achieve outstanding crease recovery. 4. To make this short finishing story shorter, no matter *what* you're weaving, with Zefran you can achieve better results with less finishing.

Fabrics now being created by selected mills (for apparel only). For further information write The Dow Chemical Company, Textile Fibers Department, Williamsburg, Va.

Zefran®

You can depend on DOW

For more data, circle A-26 on Reader Service Card

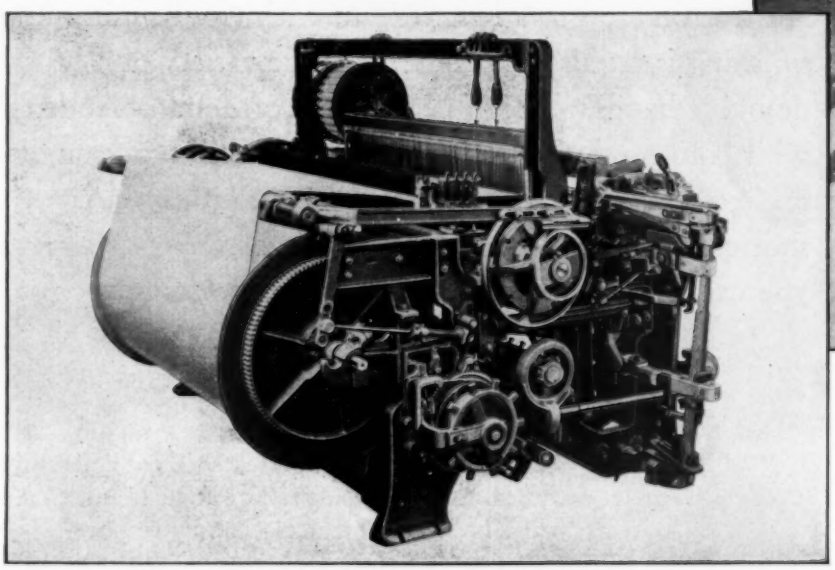
Improvements make them different...

Today's high-speed automatic X-2 Model Loom, with its many technical advances, is a far cry from the X-2 of yesteryear.

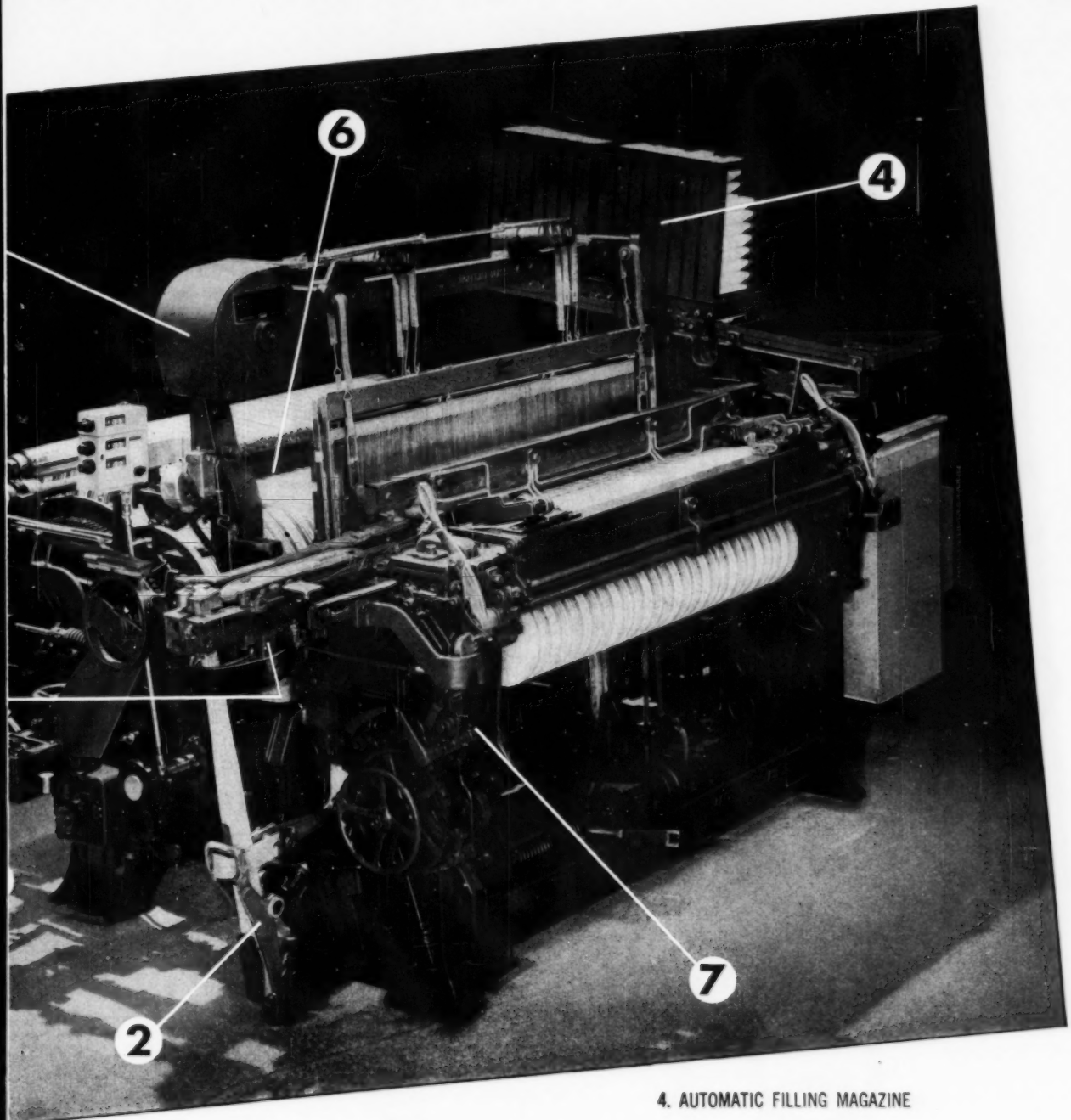
Research and Engineering developments, while reducing costs, have brought about "new highs" in loom efficiency and production.

Many of these attachments currently available on new Draper X-2 Looms can be adapted to your looms.

See your Draper Representative for additional information.



For more data, circle A-27 on Reader Service Card



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2. LINK TYPE PARALLEL
3. CLOCK SPRING TOP MOTION
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5. #14 SHUTTLE CHECK
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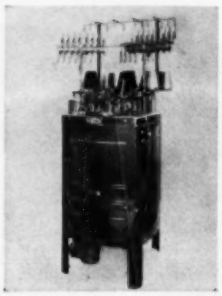


Increased Pattern Possibilities

The new Circular Suturing Attachment on the "READING" CK-A widens your pattern range — see illustrations at left. These and other inlaid patterns can now be knitted with clean-edge circular sutures. The CK-A knits a wide range of men's and boys' socks on the same diameter cylinder. It's the fastest producing inlaid pattern machine . . . and the most versatile. Available in 84, 112, or 168-needle count, with 3¾-inch diameter cylinders.

Knitting Machine Division

TEXTILE MACHINE WORKS • READING • PENNA.

Builders of Textile Machinery Since 1900

The "READING" CK-A
Circular Knitting Machine

The "Reading" CK-A Circular Knitting Machine • The "Reading" Tricot Machine • The "Reading" Full-Fashioned Knitting Machine
The "Reading" Full-Fashioned Outerwear Machine • The "Reading" Braiding Machine • Textile Spring-Beard Needles • Arrow Latch Needles

For more data, circle A-28 on Reader Service Card

Today's Choice: Plan or Drift

Almost everyone agrees now that the 1957-58 recession is over and that the next few years will be good business years. The TEXTILE WORLD index of mill production, page 10, is already registering a strong upward climb from the recession low reached in April; and the normal expectation, based on past business performance, is:

1. The over-all economy should reach new high grounds and boom until the next adjustment period sets in three or four years from now.

2. The textile industry should follow the same pattern, with a minor adjustment period about 18 months or two years from now.

The biggest question facing mills right now is: How will we use these few years of good business and better profits?

The Trouble: Wait and See

The late recession can teach a powerful and profitable lesson to any business management that will take heed.

Some of the more significant facts are: The United States alone enjoyed a fabulous surge of business from 1955 through most of 1957, and the U.S. alone paid for it in the late recession. The surge and the recession barely touched many other countries of the world.

Although the textile industry was regarded as one of the hardest-hit industries in the country, many mills went right on producing and making profits.

The business approach of the textile industry historically has been to hang on during a recession in order to make a killing during a boom. Unfortunately, in the late recession a great many other industries swung to this fatalistic attitude, respectably labeled a "wait and see" approach.

What it boils down to is taking the easy short-term course. Stated another way, it is about like taking your oars in and hanging onto the boat, hoping things will come out all right. In short, it is giving up managing the business and letting it manage you.

Needed: A Four-Year Plan

A quarter of a century ago, that technique might have been all right. But it is not workable now. Costs are too high; taxes take too big a bite in the good years; and improvements come too fast and require too big an investment.

It is all very well to make speeches about profits being too low. They are. It's well enough, too, to rake the government over the coals about outmoded policies penalizing industry. Many of them do.

But while the public talk is being done, mills would do well to face the present facts of business life.

First of all, in the U.S. now in a competitive industry such as textiles, the one big area in which a company can improve its profit potential is in manufacturing costs. It can't do a great deal about the cost of raw materials or about selling price. It either builds and maintains a cost advantage in manufacturing and finishing, or it gets in trouble.

Second, "boom and bust" is absolutely normal for any highly competitive business. It is normal for the U.S. economy. Just as surely as we are now embarked on a new business surge, just that surely we are heading for an adjustment period in a few years.

A smart management will therefore use these few years of good business not only to turn in a good performance now but, equally important, to prepare for the next period of adjustment.

Bad Periods Are the Test

The test of management competence comes in periods of bad business. The mills that made profits during the late recession did not do so by accident. The profits came largely as a result of intelligent preparation long before business began to sour.

In the next few years, most mills will make money. Some of them will milk the business of these easy profits—and head the parade of liquidations a few years from now. Others will dip into profits and build a manufacturing- and finishing-cost advantage that will pay off handsomely when the next round of liquidations start.

On page 45, we document many of the astonishing possibilities for improving a mill's profit potential. In the next two or three years, while profits are available, wise mill managements will take advantage of these improvements—and prepare themselves for the next period of bad business.

O. M. Thomas

I couldn't believe my eyes

when I saw my fabric after processing it through the Turbo Electro-Finisher

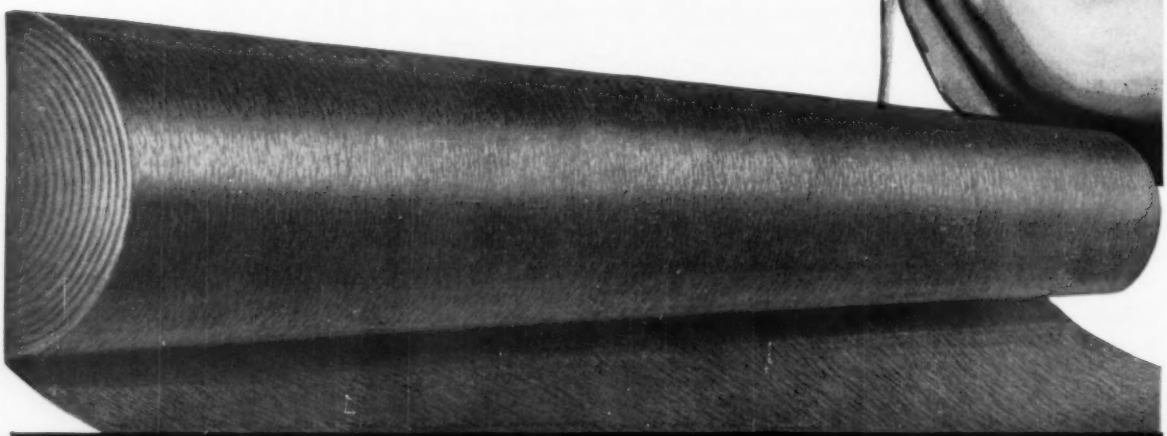
It's happening every day on the demonstration unit in the Turbo plant, where the Turbo Electro-Finisher is being used to process manufacturers' samples under actual mill conditions.

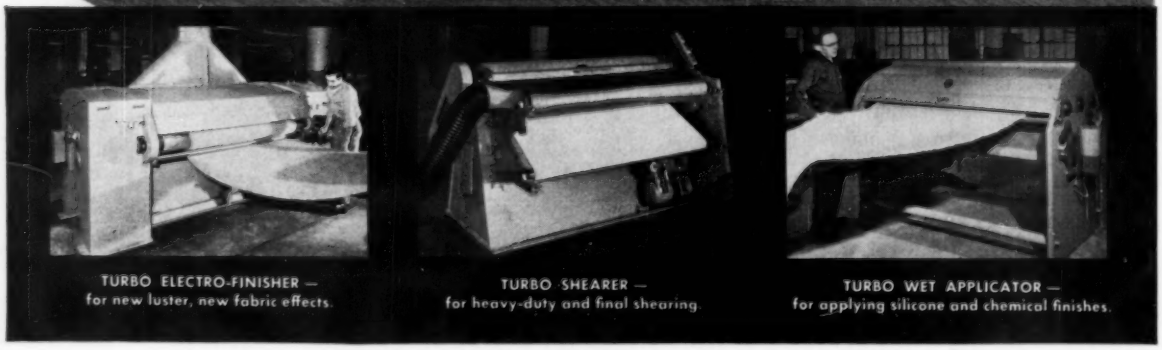
Woolens and worsteds, acrylics, pile fabrics, blends — finishing on a Turbo Electro-Finisher makes the fabric glow — softens the hand — upgrades your material as much as 50 cents a yard.

In the Turbo Electro-Finisher, a grooved, electrically heated cylinder separates and polishes the fibers, and lays them down to catch and reflect highlights. It changes the appearance and the hand . . . gives entirely new fabric effects.

Prove it to yourself — use the demonstration unit here in Lansdale to run samples of your fabric. Finishing procedures are simple. The equipment is almost completely automatic. Call or write today.

TURBO MACHINE COMPANY
LANSDALE, PA.
Southern Sales Representative: Parrott and Ballentine, Greenville, S. C.





TURBO ELECTRO-FINISHER — for new luster, new fabric effects.

TURBO SHEARER — for heavy-duty and final shearing.

TURBO WET APPLICATOR — for applying silicone and chemical finishes.

PLAN '59

How Modern Is American Industry?

A Report by the McGraw-Hill Department of Economics

THE U.S.A. is starting a new period of economic growth, as we leave behind the recession of 1958. This new period presents a challenge to the nation, to the business community and above all to the individual company – to grow *at a profit*.

By now it is clear that growth is the normal way of life for the U.S. Economy. Since 1947, our national product has been growing at a rate of 3.7% a year. And no recession, even the latest and most publicized, has interrupted the trend for long. Now the economy is growing again.

But the conditions of growth are far different from those that prevailed in the years 1947 to 1957.

Today growth in the economy does not mean pressure on capacity, for most industrial firms. It does not mean easy profits. Rather, this is growth under highly competitive conditions, with profits dependent on a firm's ability to hold down costs. **Is our plant and equipment modern enough to do the job?**

A New Survey

To find the answers to this question, the McGraw-Hill Department of Economics has just completed a special survey of business needs for modernization. **The survey shows that it would cost $95 billion to replace today's obsolete equipment.** And this is a priority job, if business is to get costs down for the years ahead.

This tremendous need for modernization presents a challenge to the U.S.A. as a nation. The Communist powers are making a strong and disciplined effort to demonstrate that they can out-produce us – that they can "plow us under" in a contest of industrial strength.

It is a challenge to American business. Our people expect a continuously rising standard of living. Our workers expect wage increases. And often their demands mean price inflation – unless we can achieve sharp gains in output. The public demands higher national income without inflation. This is the challenge to business as a whole.

It is a challenge to the individual firm. Growth in the economy no longer means an automatic rise in sales and profits for any particular company. There are no shortages; industrial capacity is ample. So to participate in growth, the individual firm must achieve better quality or lower costs than its competitors. Otherwise, there will be no profit in growth and no success story for the company.

Is business prepared today for these challenges? The answer, from our study, is clearly "No". The production and distribution facilities of the U.S.A. are not efficient enough to ensure our continuing superiority over the Communist world, to match every wage increase with higher productivity, to do business in a competitive economy at satisfactory profit to the individual firm.

This statement sounds shocking at a time when much industrial capacity is idle and the recession just behind us is being blamed on a surplus of capital goods. But the facts speak for themselves. Here is the record on the past decade of investment in new plant and equipment, and here is our new study of the job that still remains to be done.

THE MODERNIZATION JOB AHEAD: $95 BILLION

The McGraw-Hill Department of Economics asked a wide sample of manufacturing companies, and experts in other industries, "What would be the cost to replace all obsolete facilities with the best new plant and equipment?" Here is a summary of the estimates. (Details on next page.)

MANUFACTURING AND MINING	$34.3 Billion
PETROLEUM INDUSTRY	5.3
TRANSPORTATION AND COMMUNICATIONS	18.4
ELECTRIC AND GAS UTILITIES	12.0
FINANCE, TRADE AND SERVICES	25.0
TOTAL: ALL BUSINESS	$95.0 Billion

Decade of Expansion[1]

Since 1947, private business in the U.S.A. has invested $291 billion in new plant and equipment. Our manufacturing capacity has increased about 80%; electric power capacity, 145%; capacity for basic raw mate-

[1] Figures on "Decade of Expansion" are for the years 1947-1957 inclusive, except where specific reference is made to preliminary data for 1958.

THE McGRAW-HILL SURVEY OF MODERNIZATION NEEDS

Conducted by the McGraw-Hill Department of Economics in August, 1958

INDUSTRY:	AGE OF MANUFACTURING CAPACITY Percent Installed: Prior to Dec. 1945	Dec. 1945 to Dec. 1950	Dec. 1950 to Dec. 1957	COST TO REPLACE OBSOLETE FACILITIES: Millions of $
Iron and Steel	47%	16%	37%	2,855
Nonferrous Metals	47	13	40	1,022
Machinery	41	21	38	3,224
Electrical Machinery	34	18	48	1,917
Autos, Trucks and Parts	42	11	47	2,204
Transportation Equipment (aircraft, ships, railroad equipment)	59	9	32	854
Other Metalworking	54	17	29	2,351
Chemicals	30	23	47	3,070
Paper and Pulp	49	17	34	2,655
Rubber	46	9	45	600
Stone, Clay and Glass	46	20	34	1,840
Petroleum Refining	45	26	29	1,499
Food and Beverages	58	19	23	3,443
Textiles	59	18	23	1,001
Misc. Manufacturing	51	21	28	6,236
ALL MANUFACTURING[1]	48	19	33	34,771

[1] Includes petroleum refinery companies listed under "petroleum industry" in previous table.

rials, by 55%. The distribution and service industries have increased floor space by roughly 50% in the decade. In 1957 alone, business spent $37 billion on new plants and equipment – more than the combined expenditure in all of Western Europe plus Canada.

But all of this expenditure has not made our facilities as modern as supposed, or as modern as we need. Of the $291 billion invested by business since 1947, roughly $157 billion has been for expansion of capacity. Only $134 billion has been spent to replace old facilities with better, more modern equipment. And in recent years, this investment has not purchased as much new equipment as the dollar figures suggest, because prices of capital goods have climbed.

Our postwar capital investment has repaired the worst of the obsolescence accumulated during the depression and war years. But huge amounts of old equipment are still in use, as shown by the table above. This is based on a survey of the age of manufacturing capacity in several hundred companies, representing all of the major manufacturing industries. Almost 50% of our present capacity was installed before or during World War II. More than 65% was installed before Korea. Expert studies of the major non-manufacturing industries show that the age of equipment, in those industries, is even greater.

Thus, of all business plant and equipment, less than one-third is modern in the sense of "new" since 1950; two-thirds is pre-Korea.

This over-all figure is confirmed by a check on specific industries:

- Nearly two-thirds of our metalworking equipment was installed over 10 years ago, according to preliminary results of AMERICAN MACHINIST'S 1958 census.
- Over 65% of the freight cars on our railroads are more than 10 years old.
- Less than half the capacity to process chemicals, rubber or petroleum is new since 1950 – a period that has seen rapid development in such equipment as automatic controls for these process industries.

These examples take on a dollars-and-cents meaning when we recognize that the latest machine tools are about 40% more productive than 1948 models, and that a combination of new freight cars and modern freight yard equipment can reduce operating costs up to 50%. New instruments, that automatically direct the flow of a chemical (or other raw material) process, can often reduce processing costs enough to pay back the cost of the instruments in one year. These savings cannot be made in older plants. By using obsolete facilities, our industries accept a waste in labor and materials that totals many billions of dollars per year.

Why Productivity Must Rise

The U.S.A. can ill afford this waste. In the economic struggle between the free world and Communist world, our margin of superiority depends on the efficiency of our productive facilities.

For the growth of our own economy, we shall need a sharp rise in productive efficiency. During the next ten years, American business must provide the goods and services required for a population that will increase by 32 million. And the increased population will expect higher living standards. Furthermore, the population in ten years will include a higher proportion of dependent persons – children and retired people – and a smaller proportion of working age men. Thus, with a relatively smaller labor force, industry must provide more goods for more consumers.

At the same time, industry must strive to hold the line against rising costs. In an economy with a tight

labor supply, we cannot count on restraint in wage demands, however desirable such a development might be. In the past ten years, hourly wage rates have increased over 5% per year, nearly twice as fast as output per manhour. And this disparity may well continue – causing still more inflation–unless we make more rapid gains in productivity.

We can make these rapid gains – if industry goes all out to modernize its equipment. Output per manhour (in manufacturing) has increased only 2.5% per year since 1951. But this compares with gains of 4% a year in 1947-1950, and over 5% in the 1920s. Today the machines and techniques are available for us to equal, or exceed, these records – to raise output per manhour at least 5% per year. This is a job that can, and indeed must be done, to assure growth in the economy without inflation.

The Job Ahead

The dimensions of this opportunity are shown by the table on the previous page. In its survey on the need for modernization, the McGraw-Hill Department of Economics asked a wide sample of manufacturing companies how much it would cost to replace *all* their out-dated facilities with the best new equipment available. The Department also interviewed experts in each of the nonmanufacturing industries, to find answers to this question. The answers add up to a staggering bill for new plant and equipment.

Modernization of over-age facilities – replacing only what is really obsolete, by today's production standards – would require a total capital investment of $95 billion, or nearly $20 billion per year for the next 5 years.

Furthermore, new production techniques will soon make *today's* plants obsolete, in many cases. Thus, to keep pace with technical advance *from 1958 on*, will require continuing expenditures of $8 to $10 billion per year for modernization.[1]

The total expenditure to wipe out the backlog of obsolete facilities, and keep up with continuing technical advance between now and 1963, would be at least $135 billion.

The U.S.A. has never spent such a sum on the modernization of industrial facilities. Capital expenditures of boom dimension have, in the past, been associated only with the urgent expansion of capacity. **Some forecasters are now saying that because industrial capacity is adequate, the next few years will be a period of low capital investment. The figures above make clear that this would be a national calamity.** The opportunity is there–and the challenge–to invest record amounts of capital in the modernization of plant and equipment.

A National Problem

This also is a challenge to the U.S.A. as a nation. For 100 years, this nation has been looked to as the model of economic development by the rest of the world. For the first time, we face a serious challenge by another nation and another economic system that claims to be better. In a carefully documented 111 page study released in May, the U.S. State Department declared that "the most serious threat" to the U.S.A. today is the drive for economic supremacy by the Soviet Union.[2] Although a much smaller nation industrially than the U.S.A., the U.S.S.R. is today increasing its national output at a rate of 7% per year and its output per manhour by 4% per year.

The U.S.A. does not have to match these specific figures, which represent the results of forced labor in a country just starting to develop industrially. In the contest to win uncommitted nations, the statistics are not likely to be quoted exactly, in any case. But our over-all growth in national output and living standards must be so impressive as to leave no question of superiority. Our factories must be showplaces of modernization to the foreign visitor that will leave him unable to say "I saw much better" in Britain, or West Germany, or Russia.

This is the challenge to the nation –a political challenge to be sure. But it coincides with the challenge to the business community and the individual firm. And the way to meet it is the same: by thorough and rapid modernization of our plant and equipment – not by the slow and steady pace of recent years, but at an accelerated rate that reflects the greater pressure for output at lower cost.

Obstacles To Be Overcome

We must face up to the fact that real obstacles – both technical and financial–stand in the way of faster modernization. Some companies do not have the technical "know-how" required for the latest production techniques. Many more lack the financial resources. How can we overcome such obstacles, and speed up the replacement of old facilities?

In the course of its study, the Department of Economics obtained comments on these questions from many executives. One of the problems, as we noted above, has been the urgent pressure to expand capacity during most of the postwar period. In giving their attention to this problem, companies have sometimes overlooked the chance to modernize older plants.

In some cases, equipment has been kept in place because it was satisfactory, and the users were not aware of still newer designs. Some equipment users believe that equipment makers are not sufficiently aggressive in designing and demonstrating new models.

The biggest obstacle – and one that presents a persistent problem – is the shortage of funds in many companies that need and want to modernize. For all corporations, the cash flow from retained earnings and depreciation has increased by more than $5 billion from 1953 to 1958. But a number of key indus-

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[1] This estimate is based on technical developments reported by McGraw-Hill editors and current price trends for capital goods. It is consistent with the plans for modernization expenditures in 1958-61 reported by companies in a McGraw-Hill survey conducted in April, 1958.

[2] "The Sino-Soviet Economic Offensive in the Less Developed Countries" – U.S. Department of State, May, 1958.

MODERNIZATION PAYS

Profits on modernization—like all business profits—have come down since 1955. However, modernization, in contrast to new capacity, still offers a relatively quick return on investment. Here are companies' answers to the question: "In cases where you are actually replacing old facilities with new plant and equipment in 1958—how soon do you expect these replacement expenditures to pay off?"

	PERCENT OF COMPANIES ANSWERING			
INDUSTRY:	1 to 2 yrs.	3 to 5 yrs.	6 to 8 yrs.	9 yrs. and over
Iron and Steel	11%	56%	11%	22%
Nonferrous Metals	29	71	0	0
Machinery	12	56	12	20
Electrical Machinery	29	57	7	7
Autos, Trucks and Parts	40	60	0	0
Transportation Equipment (aircraft, ships, railroad equipment)	7	53	20	20
Other Metalworking	38	33	10	19
Chemicals	10	53	21	16
Paper and Pulp	22	22	22	34
Rubber	33	33	34	0
Stone, Clay and Glass	0	57	36	7
Petroleum Refining	16	50	17	17
Food and Beverages	16	44	12	28
Textiles	37	47	5	11
Misc. Manufacturing	9	52	13	26
ALL MANUFACTURING*	18	50	14	18

**Note:* Answers to a similar question, in a 1955 McGraw-Hill survey, were as follows: 1-2 years: 17%, 3-5 years: 64%, 6-8 years: 11%, 9 years or more: 8%.

tries have failed to keep pace with the general trend. **These include some of the areas where the need for modernization is most urgent: the railroads, large sections of the textile industry, some mining industries and many small to medium-size companies in manufacturing generally.** The problem of these industries and companies has grown more acute in 1958 – since their profits have declined much more than the average for all business.

Any plan to step up the pace of modernization generally must deal with the special situation in these problem areas. Depressed industries and companies need outside help, if they are to modernize. Such help would include a stronger flow of technical information and advice (and occasionally, venture capital) from the more prosperous, inventive industries – as well as advice from equipment suppliers and distributors, industrial publishers and consultants. There is also a public responsibility to help in the problem areas—not with handouts of government money, but with technical assistance and help in finding private capital (like the efforts now being pursued by the Small Business Administration).

Certainly we should lose no time in reforming those provisions of the federal tax laws that now impede investment in modern equipment by hard-pressed firms – especially the outmoded and unfair restrictions on rates of depreciation for tax purposes. At present, the tax regulations require that depreciation be computed over relatively long periods of "useful life" for most types of equipment. And this is a primary reason for the lag in modernization. Machinery generally becomes obsolete long before the expiration of its "useful life" as specified in tax regulations. But it is difficult for companies – especially small companies – to set aside cash for rapid replacement, unless the full amount to be set aside is exempt from income tax. Canada and most European nations allow more rapid depreciation for tax purposes than does the United States.

A combination of self-help with technical help, and a fair break from the tax laws, would do much to reverse the spreading tide of obsolescence in depressed industries, and in many small companies.

PLAN '59

It is this combination that McGraw-Hill advocates as "PLAN '59", to help business modernize *now* for growth and profits. This is what it will take to make a start in 1959 on the $95 billion job of modernization, disclosed by the study we have just completed:

1. A better flow of technical information on where and how to modernize business plants and equipment.

2. Careful review by the individual company of its own opportunities to modernize at a profit – then action to replace obsolete facilities.

3. Reform of the tax laws, to allow more realistic deductions for depreciation, and permit more companies to finance adequate modernization programs from this source of funds.

Much of this program is already underway. The 34 McGraw-Hill Publications, and many suppliers and distributors of industrial equipment, have stepped up their information programs to start the modernization drive. Preliminary plans of manufacturing companies show a strong emphasis on capital spending for this purpose. In August, Congress passed a bill providing limited tax relief for small business.

But the real task of modernization still lies ahead. It is the greatest challenge, and the greatest opportunity, confronting American business as we move forward into 1959.

PLAN '59

modernize now for growth and profits

• The new business cycle that began in May of this year holds special promise for the textile industry.

• Textiles may be one of the country's growth industries—but mills are not ready for it. Obsolete machinery will eat up half or more of the profits mills could make.

• In this "Plan '59" report, the editors of TEXTILE WORLD pinpoint the fabulous opportunities for improving profits in each mill department.

THE textile industry is not prepared for the new business cycle now getting under way.

For the next several years, poor productivity of obsolete equipment is going to eat deeply into the profits that could be made if manufacturing and finishing facilities were up to date.

In the 10 years 1948-57, the textile industry spent $4.4-billion for new plant and equipment. About 80%, or $3.5-billion, of that was for machinery and equipment.

During that period, productivity per manhour, based on yards of broad woven goods produced per manhour, rose from 7.7 yds. to 11.6 yds.—an increase of 67%, or 6.7% a year.

Yet it is estimated that fully 65% of the textile-manufacturing equipment in place now is obsolete.

Chances To Cut Labor Costs

In this special "Plan '59: Modernize Now for Growth and Profits" section, the editors of TEXTILE WORLD probe the textile industry department by department to see what can be done and is being done by mills to get ready for growth and greater profits.

PLAN '59

Some of the results are astonishing. For example, labor costs can be cut—

- Up to 80% in opening and picking
- 10 to 33% in carding, 75 to 80% in drawing, 60 to 70% in roving
- 40 to 60% in spinning
- 65 to 70% in slashing
- Up to 30% in weaving
- Over 60% in full-fashioned knitting, 75% in sweater knitting, 50% in warp knitting
- 50% in fabric drying and yarn drying, 50% in bleaching-materials cost

Textiles Will Boom

Signs are developing that the textile industry can grow faster than the general economy in this new business cycle just beginning.

Some of these signs are—

- The loss of markets to such products as paper and plastics has reached equilibrium with the gain by textiles in other nonapparel uses. Therefore nonapparel uses of textiles will grow with the economy.*

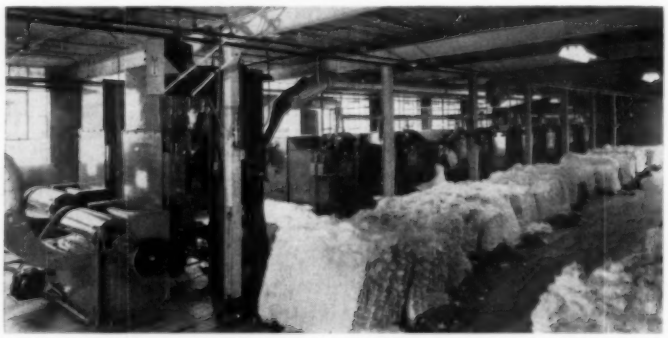
- Apparel uses of textiles will grow with population; but in addition, the increase in population of the age group 15 to 30, which uses twice as much apparel as other groups, will make apparel textiles grow faster than the economy.

- Consumer-motivation researchers report a sweeping change in the national prestige symbol from big automobiles to the home.

With these factors at work, the textile industry could be entering a period of explosive change. As this report shows, fabulous opportunities exist for mills to improve. Only a small increase in textiles' share of the consumer dollar will be needed to trigger what could be the most remarkable period of profit-potential improvement the industry has ever seen.

** Based on an analysis of the textile industry by Courts & Co., investment bankers. For a free copy of the report, circle "Courts & Co. Textiles" on the Reader-Service card, page 209.*

OPENING AND PICKING



OPENING MACHINERY is becoming more compact and fewer machines are required. Shown here is one of the most modern opening rooms in the South.

improved machinery produces cleaner and heavier laps

Modern opening and picking machinery, arranged and operated to suit individual mill requirements, soon pays for itself. Mills find that improved equipment—

- **Reduces cost per pound**
- **Produces better picker laps**
- **Improves subsequent operations**
- **Lowers the grade of cotton used**

New opening and picking equipment can cut labor cost to as little as $\frac{1}{10}$¢ per lb. A few years ago, the cost was about $\frac{1}{2}$¢ per lb.; in some mills it probably is still that high.

Aside from reducing labor cost, modern opening equipment cleans stock more thoroughly, damages fewer fibers, produces fewer neps, and does a better job of blending. The last factor is especially important where man-made fibers are blended with cotton.

Production varies greatly with requirements and kind of stock being processed. The range is from a few hundred pounds an hour to 1,800 lbs. per hr. per line.

Opening machinery has been improved mechanically

in recent years, but in most instances the operating principles are the same as before. Emphasis is on better blending and gentler cleaning. Machines are more compact, and a smaller number are used in the average cleaning line.

New Machines Are Introduced

A few new machines, such as the SRRL opener-cleaner, the Axi-Flo double-cylinder opener-cleaner, auxiliary cleaning units, and weighing blenders, have been introduced in recent years.

Generally speaking, a modern opening and picking line consists of these basic machines: blender, feed table, opener, cage section, downstroke cleaner, overhead condenser, distributor, and two-beater one-process picker. Magnets to remove tramp iron are installed in the line.

There is no such thing as a standard layout, however, since almost every mill has its own ideas about the best machinery organization for its requirements. Some mills have found that they can process lower-grade cotton by rearranging and supplementing equipment in use.

Mills processing both man-made fibers and cotton frequently have a short opening line for the former and a regular cleaning line for the latter. This arrangement is nearly always the case where blending is at drawing.

Many mills, especially smaller plants, are consolidating opening and picking into one room so that one man can run both departments. Improved fire protection is a factor in this trend.

One-process pickers have been cut down from three to two beaters in many mills. Pneumatic rack controls and high-compression calender rolls are available on new machines or as change-overs. Modern auxiliary equipment includes lap meters, electronic moisture meters, print-weigh scales, and lap conveyors.

Ten years ago, the average picker delivered about 260 lbs. of stock per hour; today production averages 300 lbs. per hour. Manhour productivity is up 16%.

Many mills that used to make 40- to 50-lb. laps are now producing 60- to 80-lb. laps. Some coarse-goods mills produce laps weighing 80 to 100 lbs.

One mill increased lap weight from 56 to 70 lbs. The number of lay-ins per card tender were decreased, but no changes were made in the number of cards assigned to each operator.

In contrast, another mill increased lap weight 18% and card tenders' work assignments 33%. Part of the job increase, however, was credited to 18x42 coilers that were put on the cards when the lap weight was increased.

Most mills that change to heavier laps find that lap evenness is better, there is less lap splitting, and one or two card tenders (in some plants) can be eliminated.

Conveyors for the heavy laps are desirable.

case studies

Gold-Tex Reduces Cotton Cost

Gold-Tex Fabric Corp., Rock Hill, S. C., revamped its opening room so that it is possible to run cotton one grade lower than the grade formerly used. Yet yarn and cloth are equal to or better than similar products made from the higher-grade cotton.

The new line satisfactorily handles from 1,600 to 1,800 lbs. of stock per hour, compared with 1,400 lbs. processed by the original line. About 0.75% more leaf, trash, and motes are taken out.

Yarn break factor is up nearly 200 points, neps are down, and general appearance is well above that of yarn made from stock cleaned on the original equipment.

The rearranged line, consisting largely of new equipment, has two two-cylinder opener-cleaners in tandem. Stock is fed from a feed table to (1) the first two-cylinder opener-cleaner, (2) a condenser, (3) an opener, (4) a condenser, (5) the second two-cylinder opener-cleaner, (6) a condenser, and (7) a rake distributor (in the picker room).

Alice Builds Model Departments

Before building Elljean Division, the management of Alice Mfg. Co., Easley, S. C., planned the opening and picking departments from scratch. There was no old machinery to be considered and no shortage of floor space to crowd operations. The sole objective was to efficiently supply stock for about 100,000 lbs. of 39-in., 80x80 print cloth per week.

Here is the opening-and-picking layout of the newest U. S. bale-to-fabric print-cloth mill:

The opening room, located in the cotton warehouse, has two lines of opening and cleaning equipment. Each line consists of four cleaning-and-blending feeders attached to preopeners. A pneumatic pipe, in place of the conventional feed apron, conveys the cotton to a gyrostatic opener equipped with three revolving grids. Next in line is a lattice opener attached to a dust-and-waste extractor feeder.

Two magnets are used in the opening line to remove tramp iron and prevent fires. The dust house, of fireproof construction, is located beneath the opening room.

The picker room is located in the mill proper. Two pneumatic pipes, one from each opening line, feed into a reserve box. A control-feed system delivers the cotton from this point to four new pickers that make a 40-in., 50-lb. lap every 8 mins. The pickers are equipped with pneumatic lap controls, two-blade beaters in the breaker section, and carding beaters in the finisher section.

The four pickers are arranged in lines of two each to minimize loss of production in the event of a shutdown. A waste hopper feeds into each line of pickers to spread waste evenly in the stock.

Dover Doubles Lap Weights

Installation of high-compression calender rolls more than doubled the weight of some of the picker laps made by Dover Mills, Shelby, N. C.

The 12-oz. laps made of Dacron and Orlon-nylon blends that formerly weighed 22 lbs. were increased to 46 lbs. Cotton and spun-rayon laps that formerly weighed 53 lbs. were upped to 67 lbs. Diameter of both laps stayed under 18 ins.

Other benefits: Split laps were minimized, evenness of card sliver improved, handling was reduced, and waste decreased greatly.

Fieldcrest Increases Staple Length

The mean upper-quartile fiber length of picker stock increased $\frac{1}{32}$ in. when new opening equipment was installed at Fieldcrest Mills, Inc., Fieldale, Va.

Tests further showed that the new layout took out 54 to 59% of the dust and trash between the bale and picker lap, compared with 40% for the old system. Dust content of the lap was reduced 62%, compared with 14.6% for the old system. Neps in the lap dropped 26.4%.

Based on 100% efficiency, flat strips were reduced 5%, vacuum strips 7.5%, fly 20.7%, roving and scavenger waste 8.5%, and spinning room sweeps 17.2%. Ends down in spinning were 10% fewer, and breaking strength increased.

The two new opening lines basically consist of a preopener feeder, a two-cylinder opener-cleaner, a cage sec-

PLAN '59

tion, a downstroke lattice opener, a condenser, and a dust extractor. Two-beater pickers are used.

Woodside Adds Cleaning Lines

Woodside Cotton Mills, Greenville, S. C., increased production and improved the quality of its laps by modernizing and consolidating its opening and picking departments.

All cleaning machinery in use except feeder hoppers (in the cotton warehouse) was moved into the mill proper and set up in the picker room. Two new cleaning lines were added to permit increased production at slower beater speeds.

One of the two original lines of cleaners produced 1,500 lbs. of stock per hour, and the other turned out 1,200 lbs. The four new lines produce about 700 lbs. per hr. each. This production can be stepped up to 900 lbs. per hr., if necessary, without damaging the cotton.

Each of the four duplicate lines, fed by an overflow reserve box with a reversible apron, consists of a two-cylinder opener-cleaner, a condenser over a lattice opener-cleaner, and a control-feed distributor at the pickers. Four-bag dust filters are attached to the lattice opener-cleaner, and similar filters are used in the feeder room.

Eight single-process pickers were overhauled and converted from three- to two-beater machines. The rebuilt pickers run at 96 to 98% efficiency and keep laps within a tolerance of $\frac{3}{4}$ oz. per yd.

Combined reworkable waste from opening and picking is about 3.45%. The feeders remove from 0.2 to 0.4% droppings; picker motes average 0.05%.

Two men run the combined opening and picking departments, and one man runs the feeder room.

Carolina Doubles Production

Opening and picking improvements helped double production, reduce waste, and improve lap evenness at Carolina Mills, Inc., Mill No. 3, Newton, N. C.

The opening room was completely revamped as part of an over-all modernization program that increased Canton-flannel production from 100,000 to 200,000 yds. per week.

Stock from seven hoppers is now cleaned in a line that consists of a condenser, a vertical opener, a condenser, a cleaner, and a porcupine-beater section. Waste averages 1.25%.

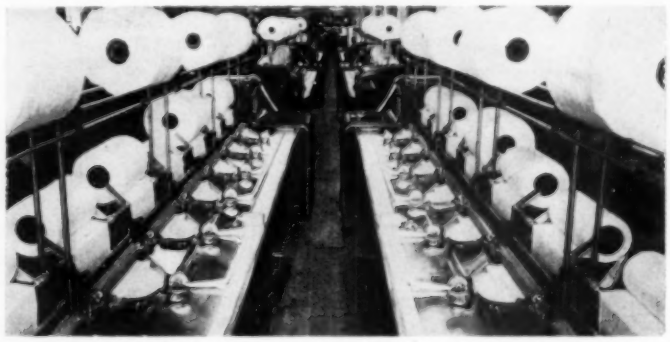
One man operates the opening room, which produces about 1,100 lbs. of stock per hour.

Three single-process pickers were cut down from three to two beaters and equipped with pneumatic lap controls, synchronizers, and perforated screens.

A 14½-oz., 55-yd. lap is produced under 60 lbs. of pressure in 6 mins. Before the changes were made, the same-size lap required 7½ mins. to make.

About 0.50% waste is removed during picking, lap evenness averages 95%, an improvement of 10% since the pickers were rebuilt.

CARDING



NEW COMBERS operate at 150 nips per minute and produce 138% more stock than older models. But many mills are still using old machines that require 90% more manhours to operate.

new carding equipment speeds manhour production

While savings in different departments of the card room vary with the type of machinery used, mills find that new equipment will—

- **Reduce carding labor**
- **Decrease comber payroll costs**
- **Triple drawing production**
- **Cut roving labor costs**

The advantages of modern carding equipment, from the cards themselves through roving, have to be considered machine by machine.

New cards, although improved in many ways, are no different in principle from cards that have been in use for many years. However, a new card equipped with 18x42 coilers can cut card-room labor 33% and increase doffing time from 40 mins. to 2 hrs.

One mill changed from 12x36 to 16x42 cans and in-

creased work assignments for card tenders from 37 to 57 cards and cut costs 20%.

Other improvements include tube gears that lay in 15 to 20% more sliver in a given-size can. Still another method of getting more sliver in the can is to use bicoil or twin-strand coilers.

The newer vacuum strippers permit one operator to strip 10 or more cards simultaneously. Ten years ago with old equipment, he could handle only two or three cards at once. Recording instruments are available to test the frequency and efficiency of stripping.

Modern cards take out more neps, reduce sliver variation to 10 or 11%, and reduce waste to 0.3 or 0.4%. Although some mills resist the idea, production can usually be speeded up substantially without affecting sliver quality.

Most mills that buy new cards do so to balance or add to production. Usually, a mill rebuilds or modifies old cards instead of buying new ones.

The general procedure for rebuilding cards is to replace or repair all worn parts and add ball-bearing comb boxes, vacuum stripping, large coilers, new fillet or metallic clothing, individual drives, and in some instances roller doffers. Auxiliary equipment may include overhead cleaners, lap conveyors, and instruments for testing evenness and stripping efficiency.

Combers Produce 138% More Stock

New combers produce up to 138% more stock than the machines that were in general use 10 years ago, and they cut payroll cost 90%. The 1958 machines have 8 or 12 heads and run 165 nips per minute, compared with old six-head machines that run 90 to 100 nips per minute. Maintenance and repair costs are much lower.

New drawing frames run 300 ft. per min., about three times as fast as the machines of 10 years ago. Efficiency is 90 to 95%, compared with 80% for the older models. Manhour production is four times as great, and payroll costs are reduced 75 to 80%.

Up to 18x42 cans are used with the new drawing frames. Other features are built-in suction cleaning and antifriction bearings. Overhead cleaners are available.

Most mills changed to one-process roving a good many years ago. There are a few mills, however, that still have multiprocess roving. One company, which changed over recently, cut out 38½ operators in its roving department alone.

The newest roving frames produce 12x7½-in. packages that weigh 76 oz. or more. These machines increase manhour production and reduce payroll cost 60 to 70%. Improved lubrication systems, automatic stop motions, and overhead cleaners all contribute to increased efficiency and better quality stock. Auxiliary equipment includes a bobbin stripper that cleans 22,000 bobbins per 8 hrs.

It is rather unusual for a mill to completely modernize its various carding departments all at one time. The usual pattern is to install new machinery or rebuild old machinery where it will do the most good in the shortest period of time.

case studies

Carolina Uses 40% Less Labor

Carding improvements contributed substantially to reducing the total number of employees from 350 to 208 at Carolina Mills, Inc., Mill No. 3, Newton, N. C. Most of these operators were eliminated from the card room.

Cards were reworked completely and equipped with 18-in. coilers and 18x42 cans. Perforated screens were added to reduce waste. Dead weights on the feed rolls were replaced with spring weights to stop the flats from rattling.

The improvements made it possible to card filling stock at 23 lbs. per hr. and warp stock at 14½ lbs. per hr. Vacuum strips now average 0.96%, flat strips 1.85%, and fly 1.30%. Evenness is 14%, compared with 18 to 20% before the cards were reworked.

Obsolete drawing was replaced with new high-speed frames that run 250 ft. per min.

Old 10x5 roving frames were replaced with 12x7 machines that produce 50% more stock per manhour than the old frames. A 55-oz. package is made with a front-roll speed of 210 rpm. for filling stock and 186 rpm. for warp stock. Two men per shift run the entire roving department.

Highland Doubles Output

New combers at Highland Cotton Mills, High Point, N. C., are producing twice as much stock as the old combers that were formerly used.

The new combers, running 150 nips per minute, have a net production of 28.9 lbs. per hr. This production can be increased if necessary. About 20 lbs. of sliver is placed in 14-in. bicoil cans. The combers are removing 14% noil.

Some old combers, still in use, run 96 nips per minute, have a net production of 14 lbs. per hr., and remove 15% noil from the same cotton.

Sliver from the new machines is 30% more uniform than sliver from the old machines. Yarn spun from the new-machine sliver is stronger and more even.

Bigger laps are made on the new machines. Sliver laps from the new combers weigh 700 grains per yard and ribbon laps weigh 740 grains per yard, compared with 620 and 630 grains per yard for the old combers.

Alma Requires Fewer Operators

Alma Mills eliminated 41½ operators (57%) from its card room by reworking machinery from cards through roving frames.

On the cards, lickerins, mote knives, clothing, chains, top flats, and feed rolls were replaced where necessary. Cylinders were surface ground, and vacuum strippers were added.

Before the changes, variation was 18 to 23%; afterwards, the figure dropped to 10 to 11%. Two operators per shift were eliminated.

Stands, rolls, and gears were replaced on the drawing frames. Variation at the finisher drawing dropped from 27 to 18%, a 33% improvement.

Two-process roving was converted to one process, and 38½ roving men, doffers, sweepers, roll pickers, frame cleaners, and speeder hands were eliminated.

Ledbetter Improves Evenness

Ledbetter Mfg. Co., Rockingham, N. C., reduced card-sliver variation to 11½% by rebuilding its cards and adding ball-bearing comb boxes, pneumatic strippers, and 15-in. coilers. Sixteen more cards were added so that production could be reduced from 11 to 9 lbs. per hr. to further improve quality.

Variation in drawing sliver was reduced from 18 to 12% by rebuilding frames and converting draw boxes to three-over-four drafting. One man now runs the entire department.

Old 11x5 and 8x4 roving frames were replaced with new 12x7½ one-process frames that put 54 oz. of roving on the bobbin, compared with 12½ oz. for the old frames. One man operates all the new frames; four men were required to run the old frames.

PLAN '59

Labor Cost Down 25% at Falls

Falls Mfg. Co., Granite Falls, N. C., cut its over-all labor cost 25% by modernizing carding and spinning in its Nos. 1 and 2 mills. Most of the savings were in the carding department.

In No. 1 mill, cards were reworked and equipped with individual drives. New 14-in. coilers were installed in No. 2 mill.

Old combers and sliver and ribbon lappers in No. 1 mill were replaced, and the machinery layout was rearranged. Creels on the new combers were extended to permit the production of a 10% larger lap. Combers in No. 2 mill were reworked, and variation dropped to 13%.

New finisher drawing was installed and old breaker drawing was reworked in No. 1 mill. In No. 2 mill, draw boxes were converted to two-over-three drafting.

New 11x5½ and 12x6 roving frames reduced labor cost 66% in the roving department at No. 2 mill. In No. 1 mill, roving frames were rebuilt to run at higher speeds.

Woodside Has High Efficiency

Rebuilt cards and new high-speed, large-package drawing and roving frames have raised standards of operating efficiency at Woodside Mills, Greenville, S. C.

Cards were equipped with 18-in. coilers, and roller doffers were added to some of them. Waste standards are: vacuum strips 0.14%, card strips 0.16%, fly 0.04%, mixed waste 0.1%, and sweeps 0.0175%.

Old drawing was replaced with 64 deliveries each of breaker and finisher drawing that runs 264 ft. per min. Variation is 16%. Standard interference is 5% for the breakers and 3% for the finishers. The standard for miscellaneous stops is 0.74 for the breakers and 0.29 for the finishers. Actual operations usually exceed these standards.

New 12x6¼ frames make a 66-oz. bobbin with a front-roll speed of 134 rpm. Evenness is 20% and standard hank efficiency is 91.9%.

Large 16x42 and 18x42 cans are used throughout the card room.

SPINNING

DIRECT SLIVER-SPINNING FRAMES are receiving increasing attention by mills. Coarse-yarn frames, such as shown here, can reduce spinning, roving, and drawing labor 50%. Other frames that spin finer yarns are available.

modern spinning machinery slashes yarn labor cost

New spinning frames are available in three general categories: extra-large-package, standard or conventional, and direct or sliver-spinning frames. Selection of the right frame—

- **Doubles manhour production**
- **Improves yarn quality**
- **Reduces ends down**
- **Increases machine efficiency**

New spinning frames can reduce payroll costs 60% and cut spinning labor in half.

With new machines, a mill can double manhour production, raise efficiency to 98 or 99%, improve quality 10 to 20%, reduce ends down 50%, and cut cleaning time 50%.

These figures, based on comparisons of standard 1958 machinery with 1948 models, are conservative. The differences are even greater if you compare old machines with the latest frames that make 1-lb. packages at high speeds.

Something else to consider in planning spinning modernization is the potential profits that can be made under

MODERN CONVENTIONAL MACHINERY with extra-long draft reduced labor 50% in this mill.

Labor Organization for Conventional Spinning (Three Shifts)

Operators	Before changes			After changes		
Overseers	1	0	0	1	0	0
Second hands	1	1	1	1	1	1
Section men	4	4	4	2	2	2
Doffers	10	10	10	5	5	5
Spinners	20	20	20	9	9	9
Oilers	1	1	0	1	0	0
Roving haulers	3	3	3	1	1	1
Bobbin haulers	1	1	1	0	0	0
Utility hands	2	2	2	0	0	0
Sweepers	1	0	0	0.5	0	0
Traveler changers	0	0	0	1	0	0
Roll pickers	3	0	0	3	0	0
Tape hands	1	1	1	1	1	1
Overhaulers	0	0	0	3	0	0
Total per shift	48	43	42	28.5	19	19
Total for three shifts			133			66.5

certain conditions by replacing conventional spinning and roving with direct or sliver spinning.

The accompanying table shows how one mill reduced labor by installing modern machinery.

Modern Frames Differ

Modern spinning frames fall into three general classifications:

1. The extra-large-package frames that have radically improved drives, builder motion, balloon control, gearing, and tension controls and that incorporate several other special features.

2. New standard frames that have extra-long drafting systems, spring weighting, antifriction cylinders, ball-bearing spindles, suction cleaning, and open creels. Auxiliary equipment includes traveling cleaners and waste- and heat-removal systems.

3. Direct-spinning frames that spin sliver from the drawing frame or card. These machines to some extent are still in the experimental stage, but under certain conditions they can be real labor savers since they eliminate one or two preparatory processes.

In recent years, many mills have "modernized" spinning frames by replacing old drafting systems and spindles and adding suction cleaning and open creels.

Most of these rebuilt frames do a good job, but no rebuilt machine has all of the advantages of a new machine. The degree of efficiency can be only relative.

Average Age Is 30 Years

Despite the obvious advantages of new equipment, the average spinning frame is 30 years old. Undoubtedly, many mills with rebuilt machinery would have put in new equipment except for the tax structure that penalizes the purchaser of new equipment. Replacement parts (change-overs) usually can be written off in one year as repairs and supplies; new machines require an average of 20 years for full depreciation.

The primary reason for replacing or rebuilding spinning is to increase production per manhour and cut payroll costs. Results vary from mill to mill, but the average increase in work assignments is:

1. Extra-large-package frames—50 to 60%
2. New standard frames—40 to 50%
3. Rebuilt frames—25 to 40%

In terms of over-all increase in pounds per manhour, results partially depend upon the amount of modernization in other departments. For example, three carded yarn mills of approximately the same size put in new spinning and modernized other departments in varying degrees. Mill A increased production per manhour 4.5 to 7.6 lbs.; Mill B, 4.9 to 9.0 lbs.; and Mill C, 5.2 to 13.1 lbs.

All mills that modernized spinning in recent years have profited in proportion to their degree of modernization. In addition to greater production per manhour, gains also include fewer ends down, less cleaning, better evenness, and improved quality and strength.

case studies

Russell Cuts Yarn Cost 5¢ per Lb.

By installing new large-package spinning frames for knitting yarns, Russell Mfg. Co., Alexander City, Ala., cut the cost of 26s about 5¢ per lb. At the same time, knitting efficiency went up 5%.

The new frames are set up to produce maximum pounds of yarn per operator, not to operate at maximum speeds. Front-roll speed is determined by ends down, which average 15 per thousand spindle hours.

The small number of ends down and other factors made it possible in spinning 26s, an average number, to assign 30 sides to each spinner. On the old 228-spindle conventional frames spinning this number, each operator ran 14 sides and ends down averaged 35 per thousand spindle hours.

Frame efficiency is 98 to 99%, compared with 91% for the old frames. Efficiency is based on hank-clock readings and actual front-roll speed.

Falls Saves $60,000 Yearly

New 4-in.-gauge, large-package spinning frames in conjunction with new winders are saving $60,000 per year in payroll costs at Falls Mfg. Co., Granite Falls, N. C. About 5,000 old spindles were replaced with 4,320 new ones.

The changes made it possible to increase work assignments 50%. Eight spinning-room operators were replaced with three spinners and one doffer. Winder operators were reduced from six to two.

The same quantity of yarn is produced as formerly.

PLAN '59

The new frames are equipped with suction cleaners and have overhead traveling cleaners. The traveling cleaners have a floor-cleaning action that has improved the salability of sweepings.

Special bobbins, built to Falls specifications, have a slight taper that makes them easy to strip at the winder where 3-lb. packages are made.

Labor Cost Down 60% at Ledbetter

Ledbetter Mfg. Co., Rockingham, N. C., was almost completely obsolete a few years ago. Recently nearly every department in the mill was modernized, and production of 12s to 24s carded yarn increased 30%. Quality improved, and costs were reduced greatly.

In the spinning department, 36 old frames were replaced with 26 new extra-long-draft frames. This change alone resulted in a 60% saving in spinning labor cost.

The frames are equipped with suction cleaning, open creels, and overhead traveling cleaners, which together reduced cleaning time over 50%. Ends down decreased from 28 to 18 per thousand spindle hours for 16s yarn, an average number.

The spinning frames are operated by three spinners, one cleaning girl, and two doffers.

Alma Reduces Labor 50%

Alma Mills, Gaffney, S. C., reduced its spinning-room labor 50% and cut direct labor cost 31% by throwing out old frames and installing modern machines in their place. About 30,500 old spindles were replaced with 27,000 new ones.

On the old frames, each spinner ran 1,512 spindles. The new work assignment averages 3,012 spindles per operator.

Break factor increased from 1,680 to 2,120. Ends down, which formerly averaged 50 to 65 per thousand spindle hours, dropped to 23. Evenness improved about 40%.

The replacement frames were installed line by line while the mill was running, and very little production was lost. Weave-room production never dropped below 92%; and shortly after the installation was completed, weave-room efficiency was 96% for the 548 looms in operation.

Rockford Installs Direct Spinning

Spinning, roving, and drawing labor was reduced from 44 to 23 operators when direct sliver-spinning frames were installed at Rockford Mfg. Co., Rockford, Tenn.

Old spinning, roving, and four-roll drawing frames were junked and replaced with 15 4½-in.-gauge direct-spinning frames and 12 deliveries of high-speed twin-strand drawing. Cards were equipped with 18x42 coilers to balance production.

Rockford produces 2s to 8s yarn for braiding into cord. Drafts of 52 are used for some numbers. Spindle speed is over 8,000 rpm., front-roll speed 200 rpm., and traveler speed up to 6,900 ft. per min.

Production for the 3,600 new spindles is more than 74,000 lbs. per week, and a lower grade of cotton can be used.

Corriher Increases Assignments

New and rebuilt spinning frames at Corriher Mills Co., Landis, N. C., permitted a 36% increase in work assignments, reduced roll picking, increased breaking strength, and increased evenness.

A comparison between the new and old frames on the same numbers (18s to 60s) shows that cleaning time has been greatly reduced. Spinners perform all duties except picking rolls.

On the old equipment spinning the same numbers, the operators picked rolls once a day. On the new frames, the picking schedule is once every three weeks, a reduction of 93.3%. The net result of the extended picking cycle and easier roll picking was an over-all reduction of 98.4% in the amount of time required to pick top rolls.

Accumulation of lint and fly in and around the cradles, aprons, rolls, and bearings is practically nonexistent on the new frames.

Ends down average 23 per thousand spindle hours. Average breaking strength is 5 lbs. greater than it was before the changes were made, and evenness is 10% better.

Manhour Output up at Harriett

A continuing program of modernization at Harriett Cotton Mills, Henderson, N. C., has increased manhour production 167% in recent years.

Although all departments were improved, the most important part of the latest program primarily affected spinning in the two plants.

A total of 140 spinning frames were changed over to extra-long draft and equipped with suction cleaners, overhead cleaners, and ball-bearing spindles.

The rebuilt frames, spinning an average of 22.9s knitting yarn, have from 20 to 25 ends down per thousand spindle hours, a substantial improvement over the unimproved frames. Cleaning time was cut greatly, and quality has improved.

Woodside Reduces Ends Down

Rebuilt spinning machinery reduced ends down, increased production per manhour, reduced costs, and improved yarn quality at Woodside Mills, Greenville, S. C.

The frames were equipped with new drafting systems, suction cleaning, open creels, and top-drive spindles.

Ends down on warp frames dropped from 50 to 18 per thousand spindle hours; on filling frames, breaks went down from 55 to 23.

Part of the gains are credited to improved carding equipment, but about 46% of the ends down are still traceable to carding faults.

Frame efficiency now is 98.5%, compared with 96% before the changes were made.

Spartan Ups Production 12%

A total of 271 spinning frames were rebuilt at Beaumont Div., Spartan Mills, Spartanburg, S. C. Immediate results were a 12% increase in production and a 35% increase in work assignments.

Creeling time was reduced 20% because the new 12x6 packages hold 54 oz. of yarn, compared with the old 11x5½ packages that held 36 oz.

Total cleaning time was cut 30%, and daily cleaning by spinners was reduced 80%. These savings in cleaning were made possible by installation of a materials-recovery system and mechanical frame cleaners and by the elimination of flat clearers, underclearers, and one top clearer.

Ends down on 12s filling dropped from an average of 30 to 18 per thousand spindle hours. There are 59% fewer ends down in warp spinning; the average for 15s warp is 25.5 per thousand spindle hours.

The frames were re-equipped with new drafting systems, spring weighting (which removed 130,000 lbs. of dead weighting from the floor), open creels, and suction cleaning.

Similar improvements and manufacturing gains were made in other units of Spartan Mills.

SPOOLING, WINDING, AND TWISTING

MODERN SPOOLERS reduce payroll cost 37% or more and produce larger packages. Reties are held to a minimum.

latest preparatory machines make better yarn packages

Bigger packages, higher speeds, and electronic slub catchers all contribute to lower yarn cost and more-efficient weaving. New machines have—

- **Higher spindle speeds**
- **Automatic knot tyers**
- **Semiautomatic doffing**

Despite the fact that a number of new yarn-preparation machines can reduce payroll costs 35 to 80%, the average age of the machines in place is 15 to 16 years. A big percentage is 20 to 30 years old.

Speeds and package sizes of most machines have been greatly increased, and electronic slub catchers have been added to some.

New spoolers can reduce manhours and labor cost up to 37% and produce cleaner and better running yarn. One model produces 6-lb. cheeses and handles 12¾-in. spinning packages. Yarn is transferred from the bobbin to the cheese at 1,200 yds. per min.

One mill, which normally produces 1.5- and 2.5-lb. cheeses, has developed a method of making up to 4.6-lb. cheeses on stainless-steel sleeves and dyeing them successfully. This improvement cut the cost of socks 2% by eliminating backwinding.

A vertical spooler cleans, oils, and winds yarn in a single operation. Up to 2-lb. pirns, straight or bottle packages, can be made at 1,200 yds. per min. More spindles occupy less floor space than on older models.

A horizontal spooler, which combines redrawing and spooling, handles yarn from bobbins, cakes, cones, pirns, or skeins. Packages weighing up to 2 lbs. are made without the use of spindles.

One of the latest-model cone winders runs 550 yds. per min., compared with 300 yds. per min. for 10-year-old machines. Knot tying is completely automatic. More floor space is required, but operating costs are lower. This machine requires 63% fewer manhours to operate than many cone winders still in use.

Another type of winder has semiautomatic doffing, self-threading thread guides and tensions, and full-spool stop motions. This machine, used for headed bobbins on uptwisters, runs 2,500 rpm. Older models were limited to 1,000 rpm.

An automatic cop winder, with each unit driven through a heavy clutch, can wind over 100 lbs. of jute or 200 lbs. of wire-core asbestos yarn in 8 hrs. at spindle speeds up to 3,000 rpm. This machine is useful in cotton mills for producing coarse carpet yarns.

Winder operations have been further improved by development of suction cleaning systems that increase production and in some instances permit increased work assignments up to 30%.

Improvements have been made in twisters. One company recently introduced a twister-winder for cordage and heavy twines that combines twisting and winding. This machine requires 50% fewer manhours than old machines formerly used for the same job.

The newer conventional twisters have spindle speeds up to 8,500 rpm. Some mills run nylon travelers 7,800 ft. per min. Knee brakes, special builders, and yardage counters increase efficiency. The gauge on some frames is adjustable, and packages hold up to 600% more yarn by weight.

case studies

Valdese Reduces Bad Lots

Bad lots of dyed, bleached, and natural sales yarn have been reduced from an average of 5% to less than 1% as the result of a modernization and consolidation program at Valdese Mfg. Co., Valdese, N. C. The management credits at least half of this improvement to changes made in the winding and twisting departments.

An addition was constructed to house winding, twisting, and packing. New winders were installed, and old winders were rebuilt. Short winders were lengthened to accommodate 120 spindles. Creels were removed to improve cleaning and lighting conditions.

Cleaning was speeded up by installing a combination ceiling, frame, and floor cleaner.

PLAN '59

Improved twisters with individual stop motions that prevent singlings were installed. These machines are used chiefly to produce two- and three-ply marl yarns of different color combinations that cannot be obtained by conventional dyeing methods.

Ideal Eliminates Knots in Yarn

Ideal Fastener Corp., Long Beach, L. I., N. Y., has set up a new department based around a twister-winder that produces cords up to 6,736 yds. long for zippers. The cord is made without knots that interfere with sewing operations.

The twister-winder operates at 5,500 rpm. and produces 85.8 yds. of cord per minute. The two heads make an S- and Z-twist simultaneously and wind the yarn into 18-lb. packages. The opposite-twist cords keep the zipper from curling.

Groves Improves Twisting

New large-package machines reduced operating costs 30% in the twister department of Groves Thread Co., Gastonia, N. C. At the same time, stroboscopic tests indicated substantial improvement in twist uniformity and thread strength.

The 56 new twisters at Groves have a spindle speed of 8,700 rpm. and a traveler speed of 8,550 ft. per min. Nylon travelers are used.

On coarse numbers, travelers are changed every two weeks; on fine numbers they are changed once a month.

Other gains include more production from available floor space, less noise, exact yardage per package, and better control over dyeing evenness.

Dunn Increases Package Size

New twisters put about 600% more yarn on the bobbin than frames formerly used at Dunn Plant, Botany Mills, Inc., Gastonia, N. C. About 24 oz. of plied yarn is twisted on the package, compared with 4 oz. put on by frames in use three years ago.

Traveler speed is 7,800 ft. per min., and travelers are changed after every second creeling. The bobbins run about six days before doffing is necessary. The old frames were doffed every 8 hrs.

Spindle speed is 8,500 rpm., compared with 5,000 rpm. for the old twisters. Yardage counters are used to supply customers with specific yarn lengths.

Bobbins conform closely to standard; and waste, dirty yarn, and overruns are minimized. The low waste factor is especially important because of the high cost of twister waste and the fact that such waste is hard to rework.

Ledbetter Speeds Up Operations

Winder operators were reduced from seven to three at Ledbetter Mfg. Co., Rockingham, N. C., by replacing old winders with three new high-speed machines.

Spooler operators were reduced from seven to two by replacing eight obsolete spoolers with one new high-speed machine. The new spooler makes 2¾-lb. cheeses at 1,200 yds. per min., and returns are less than 10%.

Twister operators were reduced from six to four by converting 27 old 160-spindle twisters into 16 272-spindle frames with 3-in. rings and 7½-in. traverse. Ball-bearing cylinders and chain drives were installed, and the package size was increased from 5 to 7 oz.

Russell Cuts Out Backwinding

By eliminating backwinding for warping, new spoolers are saving 2% on the cost of knitted socks at Russell Mfg. Co., Alexander City, Ala. The mill discovered that it could make cheeses weighing up to 4.6 lbs. and containing 157,000 yds. of yarn.

Russell also developed a method of making cheeses on stainless-steel dye sleeves and dyeing them successfully. Although the 4.6-lb. cheeses were made and dyed satisfactorily, normal warp cheeses made by Russell weigh 1.5 lbs. and filling cheeses weigh 2.5 lbs.

Carolina Reduces Winding Reties

Reties have been reduced and production increased by improving winders at Carolina Mills, Inc., Mill No. 3, Newton, N. C.

Total reties average 12.8% for 18.5s yarn and 6.4% for 5.4s yarn. From 21 to 22 4-lb. cones of 18.5s warp yarn are dropped per minute. Production of filling cones is 17 to 21 on 4s to 8.75s yarn.

The 50-, 60-, and 70-unit quillers producing packages of 2.65s to 3.30s yarn all drop 27 2.3-oz. bobbins per minute.

WARPING AND DRAWING IN

mills go for new warping and drawing in

Modern high-speed warpers and drawing-in machines have been accepted by all mills where they have been put on test. Returns are—

- **Warping speeds up to 900 yds. per min.**
- **Drawing-in labor saving of 77.6 to 80.2%**
- **Better warps in the weave room**

Modern high-speed warpers have been installed recently at several mills to greatly increase the warp output per operator: (1) Elljean Div., Alice Mfg. Co., warps a beam weighing 880 lbs. and carrying 45,000 yds. of yarn every hour, (2) Waverly Mills runs a warper at 900 yds. per min., and (3) Carolina Mills runs 650 yds. per min.

New drives and brakes have helped mills by: (1) stopping the warper for shorter ends out on section beams and (2) more uniformly tensioned sheets of yarn on the beam.

New giant 38x54½-in. aluminum beams have become common and are a big aid in warping because (1) they contain up to twice the yarn of old smaller beams and (2) they hold their balance at high speeds without vibration.

Newer creels are improving warping at many mills. Better creel stop motions with signal lights reduce the length of ends out and also let operators restart warpers faster at broken ends.

New Developments Improve Warps

Electromagnetic tensions, a new idea in warping, are being used to replace multiple-post tensions at Fischer Mills on tricot warping to maintain even 2.5 grams of tension on 40-den. nylon. The tensions are said to be equally effective on section beams for weaving.

A warper development of 1956 is doing much to improve the quality of yarn at warpers in several mills: it's an electronic control that stops the warper when bad knots, loose filaments, or slubs appear in the yarn.

Mills warping cotton, wool, and man-made fibers are having great success with short-run and sample warps up to 4,500 yds. long with a European warper introduced in the U. S. in 1957. Controls on the warper are automatic. And when desired, the drum can be positioned at slashers to slash directly from the warper drum.

After a period of testing by several mills, drawing-in machines have come along fast recently and have proved their worth. The only reason all forward-thinking men don't install them is a lack of cash.

Common statements by a few of the many mill men who have installed drawing-in machines are: "The machine pays for itself in less than three years," "There's a labor saving of $485 per week," "Labor cost is cut in half," "There's almost no maintenance after five years of operation," and "It doesn't matter what fiber you work with because the machine will draw cotton, filament, monofilament, spuns, woolen, and worsted."

Mills don't have to weave fancy fabrics to justify the investment. One Southern mill with all cam looms bought a machine because warps are drawn faster than by any other method. When a style change comes along, speed is important. And of course the cost of a change-over is much less with a machine.

Most mills have changed to machine drawing gradually by replacing common heddles with special heddles to ease their budgets from an abrupt swap.

case studies

Carolina Mills Gains on Warping

Large 38-in. aluminum section beams added recently along with a new warper hold 66% more cotton yarn than the 30-in. beams formerly used at Carolina Mills' No. 3 Mill, Newton, N. C.

A comparison of increased yardage with the new beams is:

1. On 12.5s yarn, a 30-in. head contained 23,000 yds. of warp and a 38-in. head contains 39,000 yds.
2. On 18.5s yarn, a 30-in. head contained 30,000 yds. of warp and a 38-in. head contains 50,000 yds.

Beams are warped with 304 ends on 12.5s yarn and 327 ends on 18.5s. Beams are 54½ ins. between heads.

In addition to more warps on each beam, this change-over has made it possible to reduce the standard allowance for slasher waste on the weekly waste-report summary.

The warper runs 650 yds. per min. Warper beams are handled at the warper and between the slasher room and the warper with a monorail-hoist system. Handling the beams exclusively with the hoist avoids unnecessary dropping of the beams, and therefore they aren't banged out of alignment.

1. Twill fabric—4,732 ends of 14s

4 harnesses, 4 banks

Hand drawing

1 operator at 400 ends per hr. took 11.83 hrs., or 0.68 warps per 8 hrs.

Cost

Operator	11.83 × $1.36 =	$16.10
Back man	11.83 × $1.035 =	1.53
		$17.63 per warp

Machine drawing

On 4-harness work, the machine draws 4,800 ends per hour. This warp takes about 1 hr.

Cost

Operator	1.00 × $1.36 =	$1.36
Back man	1.00 × $1.20 =	1.20
Harness girl	1.00 × $1.05 =	1.05
		$3.51 per warp

Labor saving—80.2%

2. Gabardine fabric—5,600 ends of 22s

11 harnesses, 6 banks

Hand drawing

1 operator at 400 ends per hr. took 14 hrs., or 0.57 warps per 8 hrs.

Cost

Operator	14 × $1.36 =	$19.05
Back man	14 × $1.035 =	1.81
		$20.86 per warp

Machine drawing

On this 11-harness work, the machine averages 4,200 ends per hour. This warp takes 1.33 hrs., or 6 warps per 8 hrs.

Cost

Operator	1.33 × $1.36 =	$1.81
Back man	1.33 × $1.10 =	1.46
Harness girl	1.33 × $1.05 =	1.40
		$4.67 per warp

Labor saving—77.6%

ACTUAL SAVING for drawing in two common types of cotton fabrics are 80.2% and 77.6%. Now no warps are drawn in by hand at this mill.

PLAN '59

Avondale's Machine Pays Off Fast

A $48,000 drawing-in machine at Avondale Mills' Bevelle Plant, Alexander City, Ala., is paying for itself fast and is drawing warps accurately.

Here's how Roy Moore, foreman of warp preparation, describes the results: "The machine is paying for itself in less than three years; this estimate is conservative because it is leaving a large amount for machine supplies and upkeep, and little upkeep has been necessary.

"With hand drawing, there were 15 drawing-in hands and 2 helpers. The average pay for these 17 employees was $11 per day, for a total cost of $187 per day. For a five-day work week, the labor cost was $935.

"Today with the drawing-in machine, there are three operators and two helpers on each of three shifts for a total of nine employees. The average daily pay for the nine employees is $90. For a five-day work week, the labor cost is $450.

"Therefore there's a labor saving of $485 each week. By operating 50 weeks a year, the yearly saving is $24,250.

Machine Draws 50 Styles

"But other advantages gained are more important than getting the original investment back:

1. A warp can be drawn and placed in a loom only 1½ hrs. after it is doffed at the slasher.
2. Warps are drawn in more accurately with the machine than with hand drawing.

"With hand drawing, drawing-in operators worked only one shift. Often a warp could not be completed during an 8-hr. shift, and the warp had to wait overnight. Now a warp is drawn in only a few minutes."

The drawing-in machine is 66 ins. wide, but warps 72 ins. wide are drawn satisfactorily at Avondale with the machine. The speed is 140 ends per minute. The machine draws 22 harnesses and 6 banks of drop wires. An average of 7½ warps for a total of 35,000 ends is drawn each shift.

Most warps range between 4,000 and 6,500 ends. Most cloth styles have three, four, or five harnesses. Approximately 50 styles are being drawn at present.

Fabric constructions range from 65 to 112 ends per inch; the average is about 90 ends per inch. Warp-yarn numbers, for example, are 13.20s, 16.80s, and 20.50s. Fabrics woven are tickings in plain and fancy stripes, twills, drills, denims, and drapery materials. Fabric width is 30 to 72 ins.

Avondale prepared for the machine for three years by replacing all worn harnesses with special harnesses. New drop wires were also added during the period.

Georgia Mill Cuts Cost 76.6%

Labor cost for drawing in was cut two-thirds in a Georgia mill by installing two drawing-in machines: a six-harness model that draws 190 ends per minute in warps 60 ins. wide and a 22-harness model that draws 145 ends per minute in warps 72 ins. wide.

An average of 7½ warps is drawn at the mill each shift, and 35,000 ends can be drawn per shift.

The mill makes fancy cotton fabrics that are not stock items. Style changes are made rapidly to meet changing demands. Many plain-weave, fancy cam-harness, and dobby fabrics are woven.

Warp yarns range from 14s to 26s. The trend is to finer yarn numbers. Coarse and fine yarns are drawn alternately without damage to machines or parts.

The superintendent says, "Now we weave a sample fabric in less time than it used to take to draw in the warp."

SLASHING

new slashers prove to be one of the best investments

• Only one year ago, mill men considered rebuilt slashers a good investment because they could double production per manhour. But now, new slashers are producing 67% more than rebuilt ones. Both rebuilt and new slashers pay for themselves in the same length of time.

Just a little over one year ago, a new revolution in slashing equipment started when Springs Cotton Mills lumped 14 new multicylinder slashers complete with auxiliary equipment into its Lancaster, S. C., plant.

And the latest move by a textile organization in slasher modernization was by West Point Mfg. Co., West Point, Ga., where all slashing equipment in six mills was completely modernized. A total of 16 new multicylinder slashers was added.

Numerous other mills have recently installed new slashers in large or small groups: The Kendall Co., Mollohan Plant; Henderson Cotton Mills; Blair Mills; and other Springs plants.

And several other mills have made definite plans to install new slashing equipment soon.

Modernization Pays Off Fast

Modernization in slashing equipment pays off more rapidly than in nearly any other department of a textile mill. Statements like, "Pays off up to 50% annually," "Pays for itself in two years," "Is amortized at 55.9% annually," and "Is amortized at 38.34% each year," are common.

But mill men who have modernized go further in their claims of great returns: "More-uniform warps;" "4% increase in weave-room efficiency;" "2% decrease in weave-room seconds;" "80 manhours per week saved;" "Reduced size in warps 22%;" and "Two men now do the work formerly done by four."

Before Springs started this large-scale trend to new slashers, mills were improving older slashers by small to major modifications. This work centered around new size boxes, pneumatic presser rolls, and rubber-covered size-box rolls. Most mills had already added multimotor drives.

This kind of modernization was limited in its effectiveness, and slasher speed with the improvements was raised only from an average of 35 yds. per min. to 59 yds. Mill men calculated their production in ounces per minute, and production per slasher was 550 to 700 lbs. per hr.

But with totally new slashers and equipment, production is measured in pounds per minute, and production often reaches 1,200 to 1,500 lbs. per hr.

At most mills, both new slashers and rebuilt slashers with modernized auxiliary equipment are amortized in approximately two years. But comparatively, the new slashers are the best investment because they deliver an average of 67% more yarn than rebuilt ones.

A study of four mills with unimproved slashers shows an average speed of only 35 yds. per min. The over-all efficiency of these four mills is only a little over one-third that of Springs (147 yds. per min.), West Point (125 yds.), Henderson Cotton Mills (100 yds.), Waverly Mills (148 yds.), The Kendall Co. (190 yds. with double delivery), Eagle & Phenix (90 to 95 yds.), and Blair Mills (230 yds. with double delivery).

Old Slashers		Rebuilt Slashers		New Slashers	
Mill No.	Slasher Speed (Yds. per min.)	Mill No.	Slasher Speed (Yds. per min.)	Mill No.	Slasher Speed (Yds. per min.)
1	30	1	60	1	113
2	32	2	70	2	92
3	40	3	50	3	100
4	36	4	55	4	92
Average speed	35	Average speed	59	Average speed	99

OLD SLASHERS at 35 yds. per min. are considered 100% efficient for this study; rebuilt slashers are 168% efficient; and new slashers are 282% efficient. So rebuilt slashers deliver 68% more yarn than old ones, and new slashers deliver 182% more than old ones. If you already have rebuilt slashers and replace them with new ones, you'll get 67% more slashed yarn. All slashers in this study are running standard cotton fabrics.

case studies

Springs Is New and Different

At Springs, the 14 new slashers replaced 17 old ones; and in addition, they are slashing for 1,200 new looms installed along with the slashers. So 9,000 looms are now being supplied from 14 slashers.

Slasher speed was increased from 45 to 80 yds. per min. on old slashers to 80 to 147 yds. per min. on the new ones.

Other equipment at Springs is: stainless-steel hoods over drying sections, size-preparation equipment, remote controls for drives, and complete instrumentation of size and moisture content in the warps, and temperature control.

Springs' engineers developed their own methods of applying pressure to the slasher squeeze rolls; with the system, squeeze-roll pressure is reduced at high slasher speed so that the correct amount of size is left in warps.

Section-beam creels were also designed at the mill and have space for 8 to 14 section beams of 28-in. dia.

West Point Goes All Out

At West Point Mfg. Co., slasher modernization is complete in six mills; and in each of the mills, every new slasher installed replaced two old ones.

Here the payoff is a quick return on the investment; up to 50% annually is realized. Production of the new slashers is constantly double that of the old ones.

At Lanett Mill, selected as an example of the six mills, production is 125 yds. per min. on 2,610 ends of 14s yarn.

In the six mills, the new equipment is much the same and includes: slashers, hoods for slashers, size-making equipment, complete controls for slashers and size making, air-control furnishings, and building renewal.

Two features at Lanett are outstanding: (1) a bulk-starch-handling system that includes a silo to hold 300,000 lbs. of pellet starch, and (2) magazine creels for each slasher that save an average of 30 to 40 mins. on each set creeled.

At another mill in the group, Columbus Mfg. Co., slashers have traversing headstocks and tailstocks; and both wide and narrow beams can be run on the same slasher without projecting arbors in the aisles.

Norris Increases Output 63%

Slasher production was increased 63% at Norris Cotton Mills Co., Cateechee, S. C., by rebuilding two old slashers and installing new auxiliary equipment.

Slasher speed was increased from the former 37 yds. per min. to 60 yds. per min. on 80-square cloth; and as a result, the two rebuilt slashers now slash warps for 150 X-2 looms added at the mill, which have increased the cloth output 38%.

The old two-cylinder, copper-covered, manually operated slashers were rebuilt by adding: new stainless-steel cylinder covers, size boxes, stainless-steel cooking and storage kettles, variable-speed drives, and moisture-content controls.

About $2-million was spent by Norris in modernizing and expanding its plant and equipment. The general overseer of weaving, Norman L. Hughes, says this about the program, "Of all the money we've spent in weaving, none is paying as great or as quick returns as slashing equipment."

Arkwright Rebuilds for Good Gain

From old slasher speed of 15 yds. per min. on 13s and 17s carded-cotton yarn, Arkwright Mills, Spartanburg, S. C., jumped to 70 yds. per min. with rebuilt slashers.

Therefore two slashers now do the work formerly done by four old ones and in addition: (1) slash warps for 100 more looms, (2) cut out one day a week of overtime pay, and (3) reduced the number of slasher operators.

One old three-cylinder slasher at the mill was rebuilt with a new front, drive, and size box. A used hot-air slasher was bought and was rebuilt by adding a new front, drive, and two size boxes.

Both slashers now have moisture controls and presser rolls. For size preparation, there are a homogenizer, con-

PLAN '59

trol instruments, and stainless-steel kettles.

The general manager, C. B. Hayes, Jr., says, "Warps are more uniform with better size penetration, and there's a 4% increase in loom efficiency and a 2% decrease in seconds."

It's hard to find mills that have not modernized slashing equipment to some extent.

But one mill has a two-cylinder unimproved slasher and a modern nine-cylinder slasher running side by side slashing corduroy and sateen. The old slasher runs 20 to 40 yds. per min., and the new one runs 100 yds. per min.

A second mill still running inefficient slashers runs 10 slashers 25 to 40 yds. per min. on gingham and upholstery fabrics.

A third mill with obsolete two-cylinder slashers running colored combed-cotton fabrics runs the slashers at 40 yds. per min.

The fourth mill still operates two-cylinder slashers with friction drives on sheeting, drills, and dress goods. Burlap and wool blankets are used to cover squeeze rolls; burlap is replaced every two weeks, and wool is replaced every week.

Slasher speed is only 36 yds. per min.

WEAVING

Old E-model Looms (40 ins. wide)		Rebuilt E-model Looms (40 ins. wide)		New X-2 looms (46 ins. wide)	
Mill No.	Loom Speed (Ppm.)	Mill No.	Loom Speed (Ppm.)	Mill No.	Loom Speed (Ppm.)
1	160	1	178	1	184
2	165	2	170	2	188
3	150	3	178	3	180
4	160	4	175	4	183
Average speed	159	Average speed	175	Average speed	184

OLD E-MODEL LOOMS 40 ins. wide running 159 ppm. are considered 100% efficient for this study; rebuilt 40-in. E-model looms running 175 ppm. are 111% efficient; and new 46-in. X-2 looms at 184 ppm. are 130% efficient (they're 16% faster and 14% wider). So rebuilt looms weave 11% more cloth than old ones; and new looms weave 30% more cloth than old ones. If you already have rebuilt 40-in. looms and replace them with new ones, you'll get 19% more cloth. All looms in this study are weaving standard-construction cotton fabrics.

mills with new looms produce 30% more cloth

• Mills that have installed new looms for the new-standard 46-in. cotton-cloth width are getting 30% more cloth without increasing labor cost. Four mills have upped production 26% with new 90-in. sheeting looms. With new man-made-fiber looms and other equipment, one mill increased productivity over 200%. Here's how—

Mills are increasing productivity up to 30% per man-hour with modern looms to replace old ones. For instance: on X-2 looms, the largest group of modern looms now in production, mills are averaging 30% more woven cloth than on E- and X-model looms replaced.

A wide-sheeting loom introduced in 1956 is increasing production 26% at each of four mills that have installed 100 or more looms. This 90-in. loom is running 140 to 142 ppm. to replace L-model looms running 112 ppm. and XL looms running at 115 ppm.

Although few complete new mills have been built recently to take advantage of new looms obtainable, many mills have installed new looms to replace old looms; others have increased the size of their plants by building new weave rooms.

Schwarzenbach Huber Co., Altoona, Pa., added new looms and other machines to increase productivity per manhour more than 200%. Production jumped from 20,000 loom picks per manhour to 67,000 picks.

Moultrie Cotton Mills, Moultrie, Ga., added 200 X-2 looms 46 ins. wide running at 172 ppm. to rebuilt E-model looms 40 ins. wide running at 160 ppm. in the same weave room. Over-all increase in woven cloth including cloth width is 22% over rebuilt looms.

Woodside Mills, Liberty, S. C., added 194 46-in. X-2 looms running at 188 ppm. in a new weave room to weave fine combed-cotton goods. Older rebuilt E-model looms 40 ins. wide run only 177 ppm. Over-all increase in woven cloth is 21%.

Other instances where mills built new weave rooms and installed modern equipment are: (1) Highland Park Mill No. 2, Rock Hill, S. C., with 240 50-in. X-2 looms run-

ning at 172 ppm., built in 1957; and (2) Norris Cotton Mills Co., Cateechee, S. C., with 150 46-in. X-2 looms running at 180 ppm., built in 1955.

Rebuilding Gives Limited Gains

Other mills have rebuilt old looms for an average gain of 11%; this gain is only a little over one-third that of mills that have installed new looms. Best results of the mills studied with rebuilt looms are:

A Georgia mill widened and rebuilt 84 X-model looms to produce 12% more cloth.

Exposition Cotton Mills, Atlanta, Ga., rebuilt 222 E-model looms and increased the speed from 150 to 170 ppm. for a gain of 13%.

Two other mills rebuilt E-model looms in 1957 with about these same results: (1) Joanna Mills, Joanna, S. C., is running thoroughly rebuilt 42-in. looms 178 ppm., and (2) Avondale Mills, Sylacauga, Ala., is running 570 completely rebuilt looms 166 ppm.

But mills that have installed new looms have gained other benefits above the average 19% greater productivity of rebuilt looms and 30% of old looms: (1) larger yarn beams for longer-running warps, (2) larger filling bobbins, (3) better let-offs for improved cloth, and (4) faster-acting and more positive drives.

Forty-four American mills and three foreign mills have gone to a new principle in weaving by installing loom filling winders. They have reduced over-all cost by entirely eliminating winding and bobbin-stripping departments and batteryhands. All these mills have installed the winders on 100 or more looms.

Only a few mills are left that have done nothing to improve looms, and they are being forced out of business fast. One such mill closed its doors permanently three years ago ostentatiously because of market conditions for the cotton fabrics it was equipped to produce. Its looms were more than 30 years old and were unimproved.

A second mill in the same town installed new looms and is now producing the same fabrics formerly woven by the mill out of business; it is working a six-day week.

case studies

Schwarzenbach Mills Expand

Schwarzenbach Huber Co. proved in 1955 that modern machines, not geographical location or any other factor, make weaving profits. At this time, Schwarzenbach finished a $1-million modernization program at its weaving mill in Altoona, Pa.

This program resulted in a production increase of over 200% per manhour at the mill. Now no machine in the mill is over 10 years old.

Wholesale rebuilding gave: a warper that runs 300 yds. per min. on 75-den. yarn; two multicylinder slashers that run 28 to 40 yds. per min. on yarns for sheer fabrics; a portable tying-in machine that ties an 8,000-end warp in 20 mins.; and 178 50-in. and 144 46-in. XD looms that run 176 ppm.

Man-made fibers are woven at the mill with most production on solution-dyed yarns; many looms are weaving high-bulk yarns.

A Second Mill Is Expanded

Again in 1956, Schwarzenbach ignored geographical location and completed a $1/2-million expansion on its mill at Front Royal, Va.; and another $1/4-million is earmarked for further improvements. Money for the improvements to buildings and machinery came from earnings on sales that doubled in the four years prior to 1956.

Floors and walls were renovated, air conditioning installed, a 24,000-sq.-ft. addition made, and the newest multishuttle looms installed.

Production at Front Royal is concentrated on novelty silk and silk-mixture fabrics. Loom speeds are 162 ppm. on 56-in. and 62-in. looms.

Highland Park Sets a Trend

Late in 1956, Highland Park Mfg. Co., Mill No. 2, Rock Hill, S. C., set the modern trend in weave rooms being built throughout the South by building a basement weave room to house 240 new looms.

The weave room has continuous-row fluorescent lighting, an air-changing system, a 6-in. concrete floor, and loom-wiring conduits in the floor.

The room has a 12-ft. ceiling and steel columns to support the mill building overhead. Weaver's alleys are 24 ins. wide, and clearance between yarn-beam heads in warp alleys is 36 ins.

New looms are 50-in. X-2 looms running at 172 ppm. Fabrics are broadcloth and batiste. Common fabric constructions are (1) 40 ins. wide, 136x60 and (2) 47 ins. wide, 134x68.

Ponemah Installs Filling Winders

Early in 1956, Ponemah Mills, Taftville, Conn., began one of the first production installations of new units to wind filling bobbins at looms; Ponemah's initial order was for 545 units for XD looms weaving filament and spun man-made-fibers and cotton yarns.

The units are running on 50-in. looms at 172 ppm., the same speed of all 50-in. looms at Ponemah.

Ponemah President Henry A. Truslow has this to say about the units: "They were bought as a result of a study made by Barnes Textile Associates, Inc., at a mill weaving filament-rayon fabrics equipped with 60 units. Based on these studies, the 545 units will pay for themselves in four years. Later, 50 units were added in our cotton division.

"One great improvement on fabrics woven with the unit on both solution-dyed warp and filling yarn is that no filling bands are visible, and this fabric is a critical one for filling bands. Because all filling in a given roll of cloth comes from the same cone of yarn, filling shades are more uniform."

Springfield Has Weaving Machines

Weaving machines 110 ins. wide run 230 ppm. to give a productive edge to Springfield Woolen Mills, Springfield, Tenn., one of Chatham Mfg. Co.'s mills. Springfield is basically a blanket-manufacturing mill, but much of its production is on fancy wool and man-made-fiber wearing-apparel fabrics.

The 12 weaving machines are in a separate weave room. Warp and filling yarns are 8 to 20 cut.

Warp yarns are made on a sectional warper and are wound on the warper directly from a creel. Warp beams are transported from the warper room to the weaving machines by a monorail-electric-hoist system.

Filling yarn is wound to 3-lb. cones on wooden cones. Winders are in the weave room with the weaving machines to reduce handling.

Conventional looms at Springfield are: (1) 110 ins. wide and run at 114 ppm. and (2) 92 ins. wide and run at 128 ppm.

PLAN '59

Four Mills Rebuild Looms

A large Georgia mill weaving medium-weight cotton print cloth rebuilt 84 X-model looms in 1955; the looms were also widened from 40 ins. to 48 ins.

The looms ran 180 ppm. at 40-in. width; at 48 ins. wide, they run 172 ppm.; only 8 ppm. were lost in gaining an additional 8 ins. in woven-cloth width.

Lost pickage is 4.5%, but the gain in woven cloth width is 16.7%. The over-all gain is 12.2% more woven cloth.

Exposition Cotton Mills Co., Atlanta, Ga., increased the speed of 222 40-in. E-model looms from 150 to 170 ppm. by rebuilding them.

The looms had been removed from production to make room for new looms; but since the old looms were generally in good mechanical condition and Exposition had changed to wider finer fabrics with a consequent greater source of yarn, management men decided to rebuild the looms and return them to production.

The looms are weaving drills and twills at 178 ppm. The gain is 13% in fabric, and production and cloth quality were not lowered by the increased speed.

In addition to this rebuilding project, Exposition recently built a complete new weave room with 100 new 52-in. X-2 looms for weaving corduroy.

Looms Hold More Yarn

Avondale Mills, Sylacauga, Ala., completely rebuilt 570 E-model looms early this year. Looms were disassembled and cleaned with steam. Worn and defective parts were discarded.

The following all-new parts were added: spring crank arms, clock-spring-top harness motions, tape-selvage motions, 28-in.-dia. yarn beams, and larger shuttles and lay parts for 8¾-in. filling bobbins.

These looms are now weaving denims and sports denims at 166 ppm. Job assignments were increased without increasing workloads; loomfixers have 100 looms and weavers 60 looms.

In 1957, Joanna Cotton Mills, Joanna, S. C., reconditioned 100 E, X, and XL looms by adding electric drives and brakes, antifriction bearings, and center filling stop motions.

New loomsides and spreaders were put on, and breastbeams and batteries were realigned as part of the program. The 42-in. E-model looms now run 178 ppm.

TUFTING

improved machines and yarns put tufted carpets on top

• By constantly improving machines and yarns, tufting mills have forged ahead of woven carpets in over-all sales. New machines have also moved bedspreads into the over-all bracket with tufted carpets as big-time textiles.

In mid-1957, tufted carpets captured over 50% of total carpet sales. This giant climb in sales followed a small start in 1953 when two big-time carpet manufacturers, Magee and Artloom, became nationally prominent by tufting 12- and 14-ft. cotton carpets; at that time, Artloom had only one tufting machine.

At present, practically every old-line carpet manufacturer has turned to tufting machines to supplement its woven carpets: James Lees, Bigelow-Sanford, Artloom, Karagheusian, Mohasco, Masland, Magee, and others.

And new names are fast cropping up in carpet manufacturing with the growth of tufting: Barwick, Cabin Craft, Callaway, Croft, and many others.

Machines and Yarns Expand Mills

Carpet improvements have kept pace with increased sales by (1) machine research of mills and machine manufacturers and (2) coordinated efforts between mills and yarn producers.

During the last three years, new tufting machines were constantly being developed: wider machines, a greater range of gauges, and patterned machines. To expand their plants, mills bought the machines as quickly as they were offered.

Development of new yarns especially for tufted carpets has moved along as fast as machine building. All of the first carpets were cotton. Then mills changed to spun fibers of rayon, acetate, and nylon. Blends were made of most of these yarns. The carpets were made from stock-dyed yarns or were piece-dyed.

Then solution-dyed rayon yarn and all-wool yarn became important; many mills are still using them in a large proportion of their carpets.

New Fibers Improve Carpets

Late in 1957 two yarn producers began supplying new full-dull and dull-luster nylon carpet staple for an expanding tufting market.

Heavy-denier, lofted solution-dyed, continuous-fiber yarns came into general use early in 1958 and are growing in importance at several mills.

The newest yarn being used in tufted carpets is solution-dyed textured nylon. By its great resiliency, this fiber promises to become more important than any yarn used to date. One tufting mill, Croft Carpet Mills, Inc., Fort Oglethorpe, Ga., is particularly successful in handling this Caprolan fiber.

Modern weaving equipment is also contributing its part of the success of tufting by its use in weaving jute backing. Hazelhurst Mills, Div. of Patchogue Plymouth Corp., Hazelhurst, Ga., started a new mill primarily to

manufacture backing for tufted carpets. Its machines, at full capacity, can supply half of all the woven jute or jute-craft-cord fabric backing required by U. S. tufting mills.

At the start of 1958, new automatic patterned machines for tufting bedspreads in a single operation threw bedspread tufting into big-time textiles. Sales had already reached $27¼-million for the last half of 1957. The eight mills currently producing more than three-fourths of all tufted bedspreads are now lumped into the over-all tufted-carpet group that accounted for $181¼-million sales for the last half of 1957.

Two of these eight mills bought the new patterned machines as soon as they were available; and to keep modern, the other six mills will have to follow soon.

case studies

Karagheusian Opens a Modern Mill

Every machine is new at the Albany, Ga., plant of A. & M. Karagheusian, Inc.; not a single piece of old equipment is used. Karagheusian has been making woven carpets since 1905, and is one of the oldest major manufacturers of tufted carpets.

This company supplemented the 35,000-sq.-ft. floor-space area of a former hosiery mill with 150,000 sq. ft. in a new building in Albany. Adjoining property was bought in 1956 for expansion. The plant contains tufting machines and finishing equipment.

Yarn is brought in from outside. Cotton has given way to wool and man-made fibers. Wool yarn is made at Karagheusian's Roselle Park, N. J., plant.

Common yarns are 100% solution-dyed spun viscose, 100% wool, and 90% spun viscose and 10% spun nylon.

Solution-dyed rayon yarn is supplied by Boaz Mills, Inc., where it is made on both cotton and woolen machinery. Boaz added the woolen machinery just recently: woolen cards, completely new woolen spinning frames, and worsted spinning frames changed over to woolen frames.

Karagheusian keeps improving its tufting machines and finishing methods along with changes in fibers used.

Callaway Promotes Newer Yarns

Callaway Mills, one of the oldest and largest manufacturers of tufted carpets, turned to heavy-denier, lofted, solution-dyed acetate yarns this year to increase over-all sales at its Hillside Plant in LaGrange, Ga.

This increase in sales accelerated Calloway's continuous improvement of machinery, and it also involved additional machines. Fourteen new high-speed twister frames and a complete new roller coater to apply latex backing have been added. Some of the new twister frames are used to twist single-ply packages of solution-dyed lofted yarn to three-ply yarn on 3-lb. bobbins.

Now Callaway is equipped with modern machines to manufacture cotton and many other fibers all the way from opening through tufting. Fibers being tufted at the mill at present are blends of spun-rayon yarn, 100% spun nylon, 100% spun rayon, 100% cotton, and 100% wool.

The solution-dyed, lofted, continuous-filament fibers are being used to tuft carpets of many colors in plain, textured, loop-pile, and cut-pile design.

Brooker Spread Co. Goes Big-Time

Three new bedspread tufting machines installed at directly connected mills of Brooker Spread Co., Dalton, Ga., in 1958 have put the mill in big-time textiles. The machines are raising production at the three mills from 4¾-million to 5¼-million bedspreads per year by eliminating handwork.

Before the latest machines were added, Brooker had already reduced the number of employees 18% and still increased production; new floor machines to replace table machines made this profit increase possible.

Now with a total of 10 floor tufting machines, many patterns are possible: one new machine makes hobnail patterns, and a second new machine makes plain yardage goods at 1,740 courses per minute.

But the machine doing most to increase production per manhour is a new machine with control of individual tufting ends for unlimited patterns. Cotton and man-made fibers are being run on this machine.

This patterned machine does the work of both the plain floor machine and table-model machine. In addition, it eliminates the pattern-marking operation. All sewing, except fringing, is done in one operation.

The machine is producing ⅜-in. gauge 115-in.-wide bedspreads. Machine speed is 490 courses per minute, and 16½ bedspreads 105 ins. long are produced per hour. One pattern has panels, drops, bolsters, and a center motif.

NONWOVEN FABRICS

mills expand by making practical nonwoven fabrics

• Machines to make nonwoven fabrics may or may not be new since old cards or garnetts are often basic equipment. But mills that are making profits on these fabrics are constantly changing or adding to their equipment; newer and expanding mills are installing machines designed exclusively for nonwovens.

The future of nonwoven fabrics is directly dependent on chemical, fiber, and machine research being done today. But a handful of nonwoven manufacturers are making their strike in sales for practical applications by building new plants and expanding old ones:

1. Avondale Mills, where conventional textile machines are altered for continuous nonwoven-fabric ranges.

2. Pellon, with its own machines and effective methods, has grown constantly since 1952.

PLAN '59

3. West Point, with a recently completed new $2½-million plant for nonwoven manufacturing.

4. Chicopee, by adding the modern Visking Corp. production to its own growing mills.

33 Mills Make Commercial Fabrics

Nonwoven fabrics have been important commercially only since World War II; during this time, production of nonwovens has doubled every three years and producers have climbed to a total of 33.

Nonwovens are increasing in use, but the growth has been somewhat arrested recently.

Man-made fibers are doing as much as improved machines to increase sales of nonwovens. Thermoplastic fibers, in particular, offer varied effects in themselves or the fabric can be embossed for surface effects.

Industrial nonwovens with higher tear strength than woven fibers of equal weight are being made from these man-made fibers, but tensile strength is lower.

For wearing apparel, except for petticoats, skirts, and interlinings, no one has produced a nonwoven fabric that's durable and that drapes satisfactorily.

Mills making nonwoven fabrics are planning for the future by trying to develop a fabric with hand, drape, and softness equal to that of woven fabrics.

Present nonwovens are made on one of three types or arrangements of machines: (1) wool or cotton cards or garnetts in tandem for placing fibers parallel to each other, (2) cards or garnetts set at right angles to each other to place fibers crosswise to each other, or (3) air-deposition of fibers for random or unoriented placement.

Pioneer nonwoven producers arranged their own cards and garnetts for their mills. Basically this method is still used in many mills, but big producers have added blenders and feeders for close control of web thickness.

Newer producers, along with some older ones, have gone heavily to machines to place fibers at random.

Most mills apply bonding agents with home-designed equipment. Padders are more commonly used, but spraying and print rolls are used in some instances. There's a rich field here for modern machine designing.

Important textile-machinery manufacturers have moved into nonwoven drying to furnish excellent machines. Mills are using web supports with hot-air drying ovens or steam-heated cylinders for excellent results. Continuous lines of web units are the new trend.

Binders Are a New Key To Success

Another key to developing better nonwoven fabrics is improved binders. A mill has its choice of a wide range of new bonding agents: thermoplastic fibers that bond themselves, chemical binders or powdered resinous binders, starches, latex, etc.

Finishing nonwovens is still relatively undeveloped, although skirts have been dyed and printed in beautiful colors for several years.

For a few fabrics with special end uses, the dyeing agent is often included in the liquid binder material. For other fabrics, fibers are stock dyed before fabrics are made.

Needle-punched felt, a variation of nonwoven fabrics, is a fast-growing industrial fabric. More than 25 mills, exclusive of conventional nonwoven mills, are making the fabric.

High-quality fabrics from polyester and acrylic fibers are being produced 77 mils thick with needle punching.

case studies

Avondale Designs Its Equipment

Nonwoven fabrics at Avondale Mills, Sylacauga, Ala., have moved from an obscure beginning a few years ago to a separate department of the company, Plastavon. Most machines and research in fibers and bonding agents have been made at the mill.

Machines are being improved all the time, and the nonwoven division is very successful. At a recent check, it was being run six days a week.

Rayon fabrics are made from card webs, and cotton fabrics are made either from card webs or from a sandwich web made by placing card webs on each side of a random web produced by a special random-web unit.

One of the continuous nonwoven-fabric ranges is a straight five-cards-in-tandem range with an endless belt to collect the webs, an impregnator with pressure rolls, a dryer, and a batcher to make the cloth roll.

Random Web Is Second Way

The other line is essentially the same, except that it has the random-web unit in tandem with four cards. The random-web unit is a combination of a high-speed lickerin, an air stream, and a revolving-screen take-up.

The lickerin whips off the incoming fringe of the picker lap, and the air stream blows the individual fibers in all directions. The fibers are picked up on the surface of the revolving screen and are delivered to the endless belt as a random web.

The multiple-web sheet, all-carded or random-sandwich, is impregnated with the plastic solution in the impregnator; and excess solution is squeezed out before the sheet passes into the drying oven.

The moisture is driven out of the sheet in the low-temperature sections of the oven, and then a high-temperature section gives a fusing and curing action to the plastic. The web that goes into the oven comes out as a sheet of nonwoven fabric.

Pellon Engineers With Fibers

Pellon Corp., Lowell, Mass., is one of the oldest successful nonwoven-fabric manufacturers; its products in many instances have branched out in uses they were not originally designed for.

But Pellon's success has come from its policy of engineering nonwoven fabrics for specific end uses rather than production of various fabrics at random.

Pellon uses machines developed in Europe and now patented in the U. S. Interlining is the company's most successful product. Nylon constitutes 75% of this fabric and acts as the bonding agent; cotton or rayon forms the other 25%.

Much of Pellon's equipment is built primarily for thermoplastic fibers, such as nylon and polyester fibers, to do the bonding.

Colored fabrics are made by dyeing staple before the fabric is made. Thermosetting bonding materials are used and are almost totally removed after bonding.

Troy Makes Needle-Punched Fabrics

Needle-punched nonwovens are being produced from

polyester and acrylic fibers at Troy Blanket Mills, Troy, N. Y.

The fibers are masked by resins; and since the fibers are white, they blend with resins of any color.

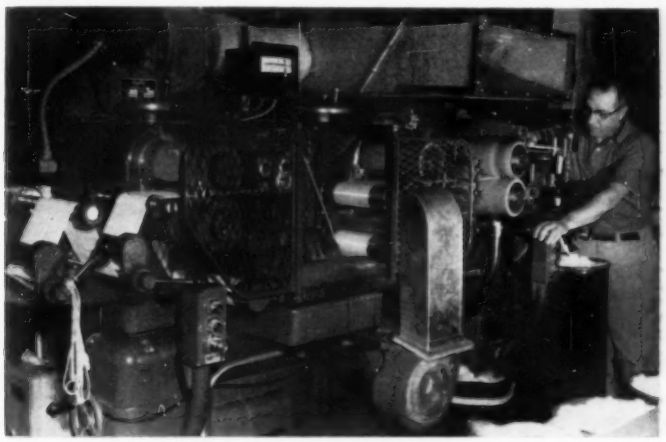
To manufacture the fabric, fibers are prepared on cards or garnetts to form a batt or lap. Then the batt is passed through a needle loom where the fibers are firmly interlaced with barbed needles thrust through the batt.

Burlap, and sometimes paper, supports the batt at the needle loom; the burlap also strengthens the punched fabric.

The complete operation from feeding through punching is a continuous one, and production reaches 300 linear yards per hour on fabrics 150 ins. wide.

Other nonwovens of this kind are made from jute, sisal, and hair.

WOOLEN AND WORSTED



NEW MACHINES are rapidly changing the worsted picture. This stapler stretches man-made fiber tow and breaks it to form sliver to be processed into high-bulk yarns or blended with wool. Other machines are cutting processes from nine to four.

modernization drastically changes woolen and worsted spinning

• Modernization has reduced operations in worsted spinning from nine to four in 10 years. Autolevellers, pin drafters, high-draft roving frames, and Super-draft spinning frames have reduced costs without impairing quality.

Modernization has probably changed worsted spinning more than any other segment of the textile industry during the last ten years. Changes are coming that will also significantly change woolen mills.

The introduction of the American system of worsted spinning and the long-draft machines that have eliminated processes has completely changed the worsted picture. The results have been fewer machines, fewer workers, and lower costs.

Worsted spindles in place decreased from 1,900,000 in 1947 to 800,000 in 1956, but modern American-system spindles in place rose from less than 118,000 in 1951 to more than 450,000 today.

The older Bradford and French systems will still be used for some specialty yarns and fibers, but more and more worsted mills are swinging over to the American system.

A typical prewar Bradford-system setup consisted of nine operations. Two intersecting gillings were followed by three drawing operations and two finisher-drawing operations on the reducer or rover before roving and spinning.

Pin drafters and high-speed gill reducers have improved these operations to where five prewar operations were replaced by three high-speed intersecting gilling operations. This step reduced both operators and waste.

Autolevellers to correct variations in sliver thickness have been introduced to many mills' modernization programs. The results have been more-even sliver with still fewer operations.

New high-draft roving frames with drafts up to 18 have further reduced operations, and modern Super-draft spinning frames developed for cotton yarns have cut costs without spoiling quality.

A typical modern worsted system now uses one operator to look after a gill reducer equipped with an Autoleveller and a second gill reducer to produce 125 lbs. per hr. of sliver for 24s knitting yarn. This sliver goes straight to the rover and spinning frame.

French-System Mills Modernize

French-system yarns are usually more expensive than Bradford-system yarns, but modern equipment is reducing

PLAN '59

these costs. High-draft machines and finishers that use rub aprons instead of porcupine rolls are some of the machines that will modernize French-system mills.

Here's a typical setup used with the new finisher:

1. High-speed gill with Autoleveller
2. High-speed gill
3. High-draft finisher
4. Spinning frame

Present French-system setups consist of up to seven operations. Here's a typical setup:

1. Pin drafter or gill reducer
2. Pin drafter or gill reducer
3. Pin drafter or gill reducer
4. Open gill box
5. Porcupine fore finisher
6. Finisher
7. Spinning frame

The American system was originally a modified cotton system with regular drawing frames for the first three operations. A typical setup before 1950 was—

1. Breaker drawing frame
2. Intermediate drawing frame
3. Finisher drawing frame
4. Roving frame
5. Spinning frame

These operations have been reduced today to—

1. Gill reducer with Autoleveller
2. Gill reducer or pin drafter
3. Roving frame
4. Spinning frame

Man-made fibers have caused many worsted mills to modernize because these fibers require special equipment such as staplers and fiber setters. Most Orlon, Acrilan, and nylon fiber comes to worsted mills in tow form; and this tow must be broken and sometimes stretched and heat treated before it can be made into silver.

Because the individual fibers in tow are parallel, operations such as carding and combing are eliminated when tow is processed; so the staplers have served to reduce operations and lower costs in worsted spinning.

New blending equipment is helping woolen mills to improve their products and cut blending costs. Automatic oiling devices are saving time and doing a better job of oiling.

Recent developments in England point to the ultimate in textile modernization with a machine that both cards and spins woolen yarns. Such a development offers lots in the cutting of costs, saving of floor space, reduction of materials handling, and elimination of processes.

case studies

Spinners Ltd. Saves Manhours

A recent modernization program at Spinners Ltd., Huntingdon, Que., reduced operations from six to four, saved 268 manhours, and increased production 16%. Spinners Ltd. produces colored Botany and fine cross-bred worsted yarns in yarn sizes from 13s to 44s.

Conventional reducing, roving, and spinning were changed to long-draft roving and spinning. The original setup had a capacity of 15,000 lbs. weekly; and the original pin drafting and Bradford drawing setup used six operations, 288 doublings, and 1,394 manhours per week. The present system uses four operations, 13 doublings, and 1,026 manhours.

The change was done in three stages. An Autoleveller replaced the two-delivery gill reducer. After the pin-drafting stage, 6x12-spindle ring reducers, 1x84-spindle cone rover, and 6x36-spindle ring rovers were replaced by 1x42-spindle and 2x84-spindle Quik-Set roving frames. Twelve conventional-draft frames were replaced by 14 long-draft conversions.

The 70 manhours spent on reducers were then eliminated. The increased production from the long-draft rovers cut the manhours per week from 242 to 216 for the whole unit. Operators' jobloads were reduced from almost 100% on reducing and 90% on roving to 70% on reducing and roving combined.

To maintain quality with the reduced operations, spinners installed quality-control techniques that considered yarn appearance, short-term unevenness, spindle efficiency, waste losses, breaks per 1,000 sp. hrs., and spinners' jobloads.

Marshall's Machines Are New

Most of the worsted machinery at Walter Marshall Spinning Corp. of Rhode Island, Thornton, R. I., is less than five years old. New fibers and yarns was one of the reasons for new equipment.

Staplers that process about 80 lbs. per hr. of Orlon tow have been installed to stretch and break the 3- and 6-den. tow into an 8-in. staple. Automatic temperature controls have been added to these machines to keep the critical temperature of heat stretching within a 2° F. tolerance.

Electronic equipment has been added to some machines to shut off the machine if ends fall down during processing.

Long-draft roving frames run at 935 rpm., but drafts are kept down to 12. Packages are 10x5 ins., and 2 hrs. are needed to put 1 lb. of 138-grain-per-40-yd. roving on each bobbin.

Most of Marshall's high-bulk yarns are two ply, and new twisters with 4½-in. rings run at 6,700 rpm. to put 4.75 tpi. in 26s high-bulk yarns.

Lebanon Adds New Frames

To keep spinning cost down and make better worsted yarns, Lebanon Knitting Mill, Inc., Pawtucket, R. I., installed four 240-spindle large-package frames to spin worsted yarns. Balloon control and guides under the front rolls have allowed lighter travelers to be used. The result is a more-even and stronger yarn.

Yarn on the bobbins has been increased to 12 oz., and doffing time has been extended to 10 hrs. Pneumafil on each frame has helped to reduce cleaning time. Each frame is cleaned at every doff with an air hose, which is located on a reel on the ceiling near the head of each frame.

Most yarn is 26s, which is spun from 3.00-hk. roving. Rings are 3 ins. in diameter, and the drafting system is three roll with single apron.

Portland Woolen Saves Money

Portland Woolen Mills, Inc., Portland, Ore., brought its Model-E spinning frames up to date with automatic lubrication that cost about $1.06 per ring. The mill expects rings to last twice their former life. New rings cost $2.65 each; so the system will rapidly pay for itself.

Other savings have also been made in oiling time and less downtime because there are no wicks to let the rings run dry. Yarn breaks have been reduced; so the yarn

quality is better. Oil consumption has been cut to one-sixth of former requirements.

The rings are oiled from a ⅛-in. nylon pipe and fed through a 0.003-in. valve behind each ring. Oil is pumped from the original container to the frames by an air pump that rests in the oil barrel.

Each frame is fed the correct amount of oil, which depends on the traveler weights and speeds, by a solenoid control assembly fixed on the frame. Excess oil is returned to the original container by a return line.

The system is now being installed on the mill's 80 W-3 looms, and similar savings are expected there.

How Mohawk Uses New Machines

Mohawk Mills Ltd., Hamilton, Ont., is using its modern equipment to advantage to produce new and interesting yarns. Converter equipment is used extensively to process yarns from Acrilan, Orlon, and nylon.

High-bulk Acrilan is made by processing stretched and unstretched tow on the converter at the same time. The unstretched component is 60%, and 40% is stretched. The heat-stretched fiber is guided through a heater unit, and the unstretched tow is guided to the converter above the heater unit and is only cut. Both lots of fiber then go through the crimping box.

Nylon yarns are spun from tow processed on the converter. The production speed of eight 220,000-den. tow is 100 yds. per min. About 130 lbs. of fiber are converted each hour on one machine. This material is then processed into 30s knitting yarn on the French system.

Dartmouth Keeps Costs Down

High efficiency with new machinery has helped Dartmouth Woolen Mills, Inc., Claremont, N. H., to compete successfully with mills that have lower labor costs.

Latest equipment, including stripping units and burr-crushing rolls, on the 13 cards has raised production to 70,000 lbs. weekly on three shifts. The card room operates at 98.5% efficiency with 10 workers per shift. These workers include back and front tenders, alley men, and strippers, but not supervisors.

A vertical napper that processes cloth at 30 yds. per min. when run in tandem with a conventional napper can be run at three times the speed when used alone.

There are 16 napper rolls. Each pair of rolls is arranged like banks of a tape condenser, but there are no aprons. The machine is equipped for wet and dry naps, and the machine can be used as a double-acting napper. Less space is required, and the power consumption is lower than for conventional nappers.

Amerotron's Blending Is Modern

New blending equipment at Amerotron's woolen mill at Barnwell, S. C., is paying off with better blends that are produced with minimum labor costs.

Eight No. 655 blending feeds are fed from openings in the floor of a mezzanine above the blending room. Each feed is set to deliver the exact percentage of blend, and a Micro switch opens each hopper at regular intervals to allow stock to drop diagonally on a small apron below each feed.

A 65-ft. floor apron travels in the opposite direction below the small aprons to convey the material to a No. 512 picker. About 3,000 lbs. of material passes through the picker an hour.

A large blending box that holds up to 13,000 lbs. has 70 rolls above it; and the stock is conveyed from the picker to the rolls, which are driven by eight reversing motors. The rolls are controlled by an electronic eye that causes the rolls to reverse.

The reversing action causes the stock to drop in the box below. When the box is full, a floor apron carries the stock between three breaker rolls that move the stock to a feed table that conveys the stock to a second No. 512 picker. The thoroughly blended stock then goes through a ceiling condenser to a bailing press.

Wellman Improves Combing

Wellman Combing Corp., Johnsonville, S. C., improved the quality of its wool tops with Autolevellers. These machines are an integral part of the nine gill reducers that process the combed sliver.

The machine stops if the incoming sliver variation exceeds 15% from standard. If several of the 44 ends fed come down, the machine adjusts itself to deliver the correct sliver weight.

The fallers are set to operate at 1,100 drops per minute, and each machine produces up to 300 lbs. of sliver per hour. This sliver is fed to finishers immediately behind the reducers to make balled top weighing 2¾ oz. per 5 yds.

THROWING

throwsters modernize with textured-yarn machines

• New machines and methods for treating man-made fibers are opening up vast possibilities for throwsters who have felt the technological impact of newer fibers greater than most processors of textile fibers.

Throwing mills' modernization plans have been directed toward the installation of machinery to make stretch and bulk yarns. In some cases, existing machinery that is no longer required to twist silk or nylon has been converted to process new yarns.

Many weavers and knitters are now using nylon and polyester fibers direct from the producer's pirn; so there has been little call for new twisting machinery for man-made fibers.

The new single-process stretch-yarn machines have eliminated four processes and have added to the number of idle redraw and twister spindles. Installations of these machines, however, reduced manhours by 36% over the former redraw, uptwisting, steaming, redraw, and untwisting processes.

PLAN '59

Downtwisters are being converted to process the stretch yarn from these machines to remove some of the stretch and add bulk. Modern equipment added to these frames includes heater boxes and heater controls.

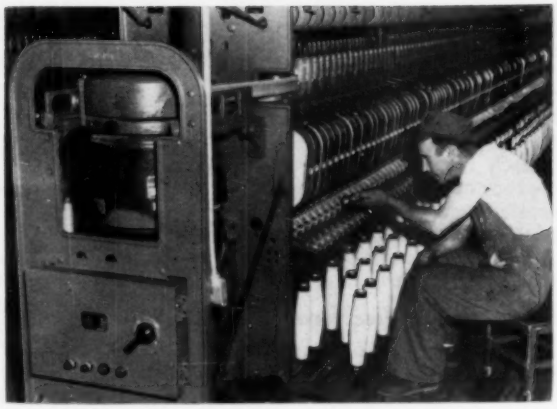
Uptwisters are being modernized to produce other textured yarns. In addition to air jets at each spindle, air-compressor equipment is installed.

New Machines Do a Better Job

New machines are now being made to do this job more efficiently. These machines have 60 spindles and give about 90% increase in package size over the converted machines.

Cone winders have also been converted to texture nylon and Dacron yarns in one process. A still newer development shows promise in lower costs and better yarns by processing up to 100 ends at once. These ends are crimped, heat set, and wound on cones in three operations; but the job will eventually be done in a continuous form.

Productivity on half-turn twist operations has been increased 300% by double-ring twisters, which handle glass fiber and novelty yarns at yarn speeds up to 9,000 ins. per min.



STRETCH-YARN MACHINES are being installed by throwsters to satisfy the demand for new stretch and textured yarns. Latest machines cut the processing of stretch yarn from six to two operations.

case studies

Concordia Diversifies

Concordia Mfg. Co., Central Falls, R. I., has modernized its equipment to produce new types of yarns made from man-made-fiber filaments. These yarns include Saaba and stretch yarns for hosiery, outerwear, and underwear.

Model-10 twisters have been converted to make the Saaba yarns. Stretch yarns that have been processed on Superloft machines are treated on the twisters to remove some of the stretch and to improve the bulk.

Each spindle on the Model-10 twister has been equipped with a heater box and feed rolls that pass the yarn over the heater boxes. One end of S-twist yarn and one end of Z-twist yarn are creeled above each spindle.

These two yarns pass through the feed rolls to the heater boxes and then around a take-up wheel. The two yarns are then twisted together on a large twister bobbin.

The converted Model-10 machines have 100 spindles each with 5-in. rings. The spindle speed is 5,400 rpm. to put 2.9 tpi. in the finished yarn. Each spindle processes 2¼ lbs. of 2/70-den. yarn each day. Delivery of the stretch yarn over the heater boxes is 52 yds. per min.

Control boxes that maintain the temperature of the heater boxes to 440° F. for 70-den. yarns have also been added to the Model-10 twisters.

Concordia has also modernized reeling with reels that wind up to 12 skeins simultaneously. The yarn is wound from double-headed bobbins into 44-, 48-, or 54-in. skeins for dyeing. The operator laces skeins on one arm of the reel while the other half is running. When the skeins have been laced and removed, the operator reverses the reels to put the empty reel into running position.

Sapona Now Makes Stretch Yarns

Sapona Mfg. Co., Inc., Cedar Falls, N. C., installed 10 stretch-yarn machines in a new addition built especially to produce stretch-nylon yarns. These machines were added to diversify Sapona's regular throwing production.

The Superloft machines have 216 spindles each and produce about 450 lbs. of stretch yarn weekly. Most yarn run is 70-den. 34-filament nylon with a Z twist of 0.5 tpi.

Spindle speeds are 33,600 rpm., and 62.5 tpi. is put in the yarn. About 168 hrs. are needed to fill the take-up bobbins with 70-den. yarn.

Heater blocks are controlled at 388° F. for 60-den. yarns and 430° F. for 70-den. yarns, and one heater block serves 18 spindles. The feed roll is driven at an overfeed of 6.2 for 70-den. yarns.

To keep these machines producing the best-quality yarns, maintenance men regularly check the heater-block temperatures with a portable pyrometer. The blocks are also cleaned every six weeks while the blocks remain at a temperature of 215° F.

Temperature in the new addition is maintained at 80° F., and the relative humidity is controlled between 65 and 68%. Light from glass-block windows supplements the fluorescent lights that give an illumination of 40 ft.-cs. at the operator's eye level.

Roth Uses Modern Equipment

Modern machines are helping Chester H. Roth Co., Inc., Burlington, N. C., produce new types of yarns for stretch socks. Much of the 70- and 100-den. yarn is twisted with cotton to produce cotton-covered stretch-nylon socks.

Superloft machines process the nylon from 2-lb. pirns. Between 12 and 17 grams tension is placed on the yarn, which is run through heater boxes controlled at 450° F. False-twist spindles rotate at 30,000 rpm. to put 60 tpi. in the yarn. Each spindle on the 215-spindle machine processes 2 lbs. of 70-den. yarn per week.

Automatically controlled dyeing machines process the stretch yarn, which is wound into muffs on 42-in. reel skein winders. These muffs weigh about 8 oz., and they have an open wind that allows excellent dye penetration.

Claussner Makes Taslan

To diversify throwing operations at Claussner Hosiery Co., Paducah, Ky., several double-deck uptwisters were converted to produce Taslan yarn. One deck was eliminated; so there are now 41 spindles on each side of the frame.

Air jets were installed at each spindle position over the overfeed rolls, which turn about 10% faster than the take-up rolls. A new air compressor fitted with an air filter was installed to supply the air to the jets.

A storage tank was built to hold the compressed air at 70 to 80 psi.-ga. A pressure regulator was installed on each machine to hold the pressure at 50 psi.-ga. Water traps were put throughout the system, and the last trap near the machine is kept slightly open to make sure that no water gets to the jets. The take-up speed on the converted machines is controlled at 106 yds. per min. Each spindle processes about 2 lbs. of 70-den. yarn per day.

KNITTING

modernization in knitting mills means more production per manhour

- Knitting mills that have modernized are producing more and better goods with fewer workers than mills that are sticking to old equipment.
- Other advantages of modern equipment are wider style ranges that put mills in stronger competitive positions.

Modernization programs in knitting mills are helping fewer workers produce more goods. Since 1951, more than 26,000 workers have been eliminated in knitting mills by new equipment.

This reduction in workers has helped counterbalance management's growing problems in higher labor costs. Minimum-wage increases since World War II have affected knitting mills more than any other textile mills.

More and more fringe benefits paid to workers in the form of vacations with pay, retirement pensions, hospitalization, and other insurance plans are worrying mill owners. These benefits amount to more than 17¢ per hr. in some mills, and provision must be made somewhere on the cost sheet for these hidden costs.

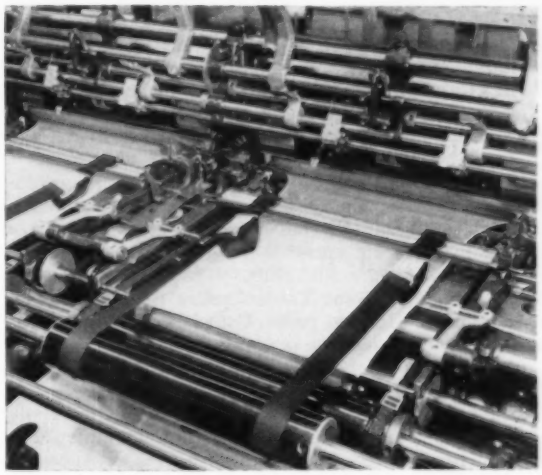
Hosiery Production Is Faster

Machinery builders have not been lax in supplying knitters with new equipment to reduce their production costs. When solid-color argyle socks were knitted on hand machines 10 years ago, 2 doz. pairs of socks per operator per day was considered good production. Today's automatic machines allow one knitter to produce 80 doz. pairs of better-quality argyle socks.

Two years ago, the introduction of automatic full-fashioned-hosiery machines raised production from 16 doz. to 34 doz. pairs of stockings per shift per knitter. These machines automatically rack the carrier stops to the correct position, and they have automatic friction boxes.

Full-fashioned-hosiery-machine builders are still striving for greater automation, higher speeds, and more sections to increase the productivity of their machines. Newest automatic features eliminate such jobs as inserting welt wires and hooking up main draw-off bands.

Timestudies taken on a recent installation of 60-gauge 38-section fully automatic machines show that a knitter has time to spare when he operates two such machines. The productivity per operator on such an installation can be increased to 48 doz. pairs of stockings per shift—an increase of 200% from pre-1956 installation.



AUTOMATIC FEATURES on modern full-fashioned machines include devices that hook the welt wires and draw the fabric from the needles during knitting. This and other devices increase production per worker from 16 doz. to 48 doz. pairs of stockings per shift.

Modern Machines Increase Sweater Output

Modern sweater machines have allowed mills to cut their production costs considerably by doubling the number of feeds on these machines. One mill raised the production of interlock sweaters to 3,500 doz. weekly from eight machines by rebuilding conventional yardage machines with 30 feeds.

Today's pattern-wheel machines have 32 feeds. Mills that have installed this equipment have boosted their production 75%; and they are making fabrics with wider pattern ranges.

Underwear mills that have rebuilt their antiquated rib machines have profited by increased production per knitter and better-quality fabrics. New stop motions and other equipment on these machines have allowed larger work assignments for knitters.

New tricot and raschel machines have doubled the production from the same floor space over the last two years. Photoelectric stop motions, 30-in. beams, and runner control devices have assisted the new machines in reducing labor costs because knitters have doubled their production or patrollers have been eliminated.

Labor costs of tricot fabric from 400-courses-per-minute machines are $0.088 per lb.; while labor costs for 800-courses-per-minute machines are $0.044 per lb. Depreciation and burden costs for the slow machines are $0.037 per lb., while these costs for the fast machines are $0.023 per lb.

Tricot machines with 30-in. beams save about 50% in downtime required for changing warps compared with machines with 21-in. beams. A 30-in. beam holds about 80,000 yds. of 40-den. nylon compared with about 30,000 yds. on 21-in. beams.

Modern Machinery Is Expensive

Modern knitting machines are expensive machines. Some machines cost $45,000, and low profits in recent years have left few knitting mills with money to invest in new machines. This situation has led mills to resist buying new equipment if there is little chance of the equipment paying for itself in three years.

Knitting mills are caught in a tough cost squeeze, however. Labor and material costs are constantly rising, and most mills find new equipment is the only answer to holding costs in line and keeping orders flowing in.

Most mills following this policy are staying in business and turning in a profit.

CASE STUDIES

hosiery

Lee Increases Production

Modernization has affected full-fashioned-hosiery mills more than other knitting mills because of the high labor cost in these mills. Many full-fashioned knitters have been displaced by automatic machines.

Lee Hosiery Mill, Inc., Landrum, S. C., for instance, added two 30-section 60-gauge automatic machines in 1956. Running at 100 courses per minute, the two new machines, which are operated by one man, knit 34 doz. pairs of stockings per 8-hr. shift.

Production from one knitter before the new-machine installation was 16 doz. pairs of stockings per 8-hr. shift; so the production increase per knitter is more than 100%.

Lawler Cuts Labor Costs

Modernization programs are helping many mills that make men's and children's hosiery to stay in business. Lawler Hosiery Mills, Carrollton, Ga., for instance, has installed double-cylinder machines to replace hand-transfer machines. One girl operated three or four hand-transfer machines, but one girl now operates 10 of the automatic machines.

The new machines have two-feed attachments, and they knit a true-rib top. Better socks with greater design possibilities are an added advantage. Stretch yarns can now be run throughout the sock. On the old machine, a nylon-staple yarn was run for the transfer operation.

Inspecting operations in the same mill were modernized with four automatic inspecting machines, which have boosted production 25% over the old method of stretching the socks over wooden forms. Production from each machine is now 300 doz. pairs of socks per 8-hr. shift.

Slane Knits More Socks

Slane Hosiery Mills, Inc., High Point, N. C., is installing new knitting machines, which are not only reducing labor costs but are also producing better socks with greater design possibilities. These machines have four feeds, compared with two feeds on the older machines.

So far, 42 machines have been installed and each knitter looks after about 15 machines. Each knitter's productivity ranges from 80 to 90 doz. pairs of socks according to the design and the number of yarn changes.

The time to knit a plain argyle sock on a new 112-needle machine is 3.25 mins. Operating at 90% efficiency, these machines knit about 6 doz. pairs of socks, compared with 3 to 4 doz. pairs of similar-type socks from the older machines.

Athens Saves Labor Costs

When Athens Hosiery Mills, Athens, Tenn., installed automatic transfer machines for anklets, the savings in labor costs were used to buy better raw materials and sell the socks for the same price. The policy paid off in more orders.

Before the new machines were installed, two shifts were in operation and 13 knitters ran 48 machines each shift. Three girls now operate the 48 new machines each shift, and the rib knitters have been eliminated.

Nine transfer knitters were taught to run the automatic machines, and the remainder of the knitters were transferred to other work.

The machines run at 180 rpm. but produce less than 3% seconds. Athens also saved yarn with the new machines because no roving courses are necessary. A racked welt and the tight stitches at the transfer course made a neat appearance to give the socks a better sales appeal than the hand-transfer goods.

Bear Brand Improves Boarding

By rebuilding its horizontal boarding machines, Bear Brand Hosiery Co., Kankakee, Ill., increased its finished boarding production of women's hosiery. The average production per operator has been increased from 110 doz. pairs per 8-hr. shift to 136 doz. pairs per 8-hr. shift.

An automatic carriage and form actuator was added to make the boarding operation more automatic. The actuator brings the forms forward for dressing and stripping.

The operators are timed automatically, and 7 secs. are allowed for stripping six stockings from the forms. Five of the forms move back automatically while a stocking is drawn on the other form, which then returns automatically to its original position.

A second empty form then comes forward for dressing. Each form is brought forward at intervals of 3.5 mins. until all six forms have been dressed. The second six forms are brought forward in a body, and the process is repeated.

Rittenhouse Improves Quality

Rittenhouse Hosiery Mills, Inc., Boyertown, Pa., is among the women's hosiery mills that have modernized in recent years to produce women's seamless stockings. Automatically controlled temperature and humidity conditions and electronically controlled knitting machines were part of the improvements to help control quality and length problems.

The 400-needle knitting machines are all driven from

individual motors at 185 rpm. To further raise efficiency and quality, the machine speeds are electronically controlled to get the exact speed required for various parts of the stocking.

Stop motions for faulty needles are electrically controlled. A plate that rides close to the needles touches faulty needles and stops the machine. The plate also helps to pull down the welt at the start of the stocking.

Each set of 60 machines is manned by one fixer and two helpers who continually check the stockings from each machine and replenish the yarn supply. The production from each set is more than 60 doz. top-quality stockings per shift.

Princeton Speeds Inspection

Before Princeton Hosiery Mills, Inc., Princeton, Ky., installed six automatic inspecting machines, there were 28 girls engaged in turning, inspecting, and mending children's and infants' hosiery. Today six machines are helping nine girls to do the same work.

The machines have four forms that take care of sock sizes from 4s to 11s. The four fins on each form are made to stretch the sock out for 100% inspection.

After the sock has been drawn on the form, the form is turned while the sock is inspected on all sides.

Inspectors at Princeton are now processing 525 doz. small-size socks, 500 doz. medium-size socks, and 475 doz. large-size socks per 8-hr. shift.

One Mill Saves 16¢ per Doz.

One of the biggest changes taking place in children's hosiery mills is the replacement of hand-transfer knitters with modern automatic machines. One mill made a study of the actual savings in knitting costs and reported a savings of 16¢ per doz.

However, other savings were apparent that were difficult to put down in dollars and cents. For instance, the ribber installation was eliminated; so the space used for this operation was saved. Storage of the transfer tops was eliminated, and the labor to handle the storage was not needed. The separating operation was eliminated.

One girl can run 10 to 12 double-cylinder machines compared with three or four hand-transfer machines, and the double-cylinder knitter will knit more than twice the production of the hand-transfer knitter.

Knitters are difficult to train for hand-transfer machines because of the exacting work of putting the stitches on the point rings. But girls enjoy operating automatic machines because they have electric stop motions and the knitter can leave the machine for short periods of time.

underwear

Griffin Knits Better Fabrics

New spring-needle machines at Griffin-Jaco Mills, Inc., Griffin, Ga., have helped the mill to produce more and better fleece fabrics and reduce needle breakage. One knitter now looks after 120 cones on 40 feeds.

The machines are 20 gauge, and 21-in. cylinders run at 60 rpm. These machines each have five feeds and three-point electric stop motions are fitted at each feed.

An electric brake on the new machines has stopped backlash and helped to reduce faults. Feed wheels have been equipped with Oilite bearings for smoother running.

The same mill has also added latch-needle machines in all body sizes with up to 54 feeds on 19-in. cylinders. Four needle protectors and eight hole detectors on each machine reduce faulty work.

When a machine is creeled, all the cones are changed at one time and all cones are pigtailed. Knitters can look after more machines because the machine runs for about 7 hrs. before the yarn is renewed.

Parsons & Baker Rebuilds

Parsons & Baker Co., Phoenixville, Pa., more than doubled production from its circular rib machines by having them rebuilt to accommodate more feeds. Cam sections were modified to allow one feed per diametrical inch.

Machines of 20-in. dia. that were originally equipped with eight feeds now have 20 feeds. Double-tie devices were also installed to reduce yarn waste, press-offs, and machine stops.

Although the 12-in.-dia. machines rotate at 50 rpm., the yarn cones stay rigid on the bobbin stands and do not tilt. Yarn-stand pillars were lowered about 4 ins. to bring slub catchers within easy reach of the operators.

Electric hole detectors were installed to keep bad-needle faults down to 8 ins. Cleaning devices on each machine help to keep machines free from lint and relieve the knitter of cleaning duties. The air blast operates every 2 mins. and is timed to last 7 secs.

Individual drives were put on each machine to further improve efficiency. The motors are 1-hp. pancake-type motors that occupy little space. A free-wheeling handle has replaced the old fixed wheel.

The mill is getting more than double the former production from the same space, and the efficiency of the rebuilt machines runs from 85 to 90%.

Gibbs Modernizes Packaging

Packaging of knitted garments at Gibbs Underwear Co., Philadelphia, Pa., was a slow hand job until automatic machinery was installed to help do the job. The new setup allows ten girls to do all finishing operations from inspecting and mending to final packaging on 1,200 doz. garments in single bags per 8-hr. shift.

Seven inspectors sit at a conveyor belt, the end of which is close to the final sewing operation. Each garment is stretched over a lighted frame by the inspectors and given a thorough inspection; so there's little chance of the speeded-up system causing more faulty work.

The conveyor belt runs the inspected and folded garments through a rotary press that steams the goods under pressure. The garments drop on a second conveyor, and two girls remove the garments and place them in polyethylene bags with the aid of a machine that blows the bag mouths open.

The bags are placed on the conveyor and run through a machine that seals the bags and trims off the excess material. The packages then drop on a table to be placed in boxes by the final operator.

Union Underwear's Program

When Union Underwear Co., Inc., moved to Campbellsville, Ky., modern machines and methods helped to increase production, reduce costs, and keep seconds at a low level. Rib knitting machines are equipped with the latest devices to increase production and improve quality. These machines have a geared ring around the cylinder instead of the usual hand wheel.

This arrangement allows lots of space around the machine; so yarn can be trucked right to the machine. The machines are grouped so that each knitter has an equal work assignment of machines.

PLAN '59

Automatic lubrication on each rib machine supplies constant lubrication to the dial and cylinder needle cam tracks. These units have eliminated the oil marks prevalent when conventional oiling was used and have aided quality by reducing needle breakage.

Electric hole detectors have reduced waste by stopping the machine when holes are made in the cloth by faulty needles or imperfect yarn. Six fingers are arranged one above the other and adjusted to suit the taper of the cloth tube. When the tips of the fingers fall into a hole or drop stitch, the finger trips and stops the machine.

Standard Improves Knitting

Standard Knitting Mills, Inc., Knoxville, Tenn., has spent a lot of money recently on modernization of its knitting rooms. The program is paying off in increased production, better-quality fabrics, and more-contented workers.

Rib machines have been replaced or rebuilt. Rebuilt machines have automatic cleaning equipment, automatic oiling, double creel attachments, individual drives, and inspection lights inside the fabric. All attachments have helped knitters to produce more and better fabric than with the older machines.

New latch-needle jersey machines have interchangeable heads that provide flexibility for seasonal changes. These machines are built with the maximum number of stop motions and ends. When machines are required for smaller diameters, the heads are changed and the stop motions not required are blanked off.

Overhead cleaners in the spring-needle knitting room have reduced knitters' cleaning chores and kept much lint from getting in the fabric. Two cleaners in tandem wind around the knitting room to keep both machines and ceiling clean.

outerwear

More Patterns At Electro-Knit

Electro-Knit Fabrics, Inc., Brooklyn, N. Y., increased the scope of its patterned knit fabrics with 32-feed pattern-wheel machines equipped with four-color stripers at each feed. Production per machine is up 75% compared with the mill's former 16-feed machines.

Patterns can now be knitted that were not possible on the 16-feed machines. No tuck bars or pattern placers are used, but the pattern length is 9 ins. before the repeat commences again.

The 26-in.-dia. machines have 128 yarn stands with four tiers of yarn rings. The yarn is arranged so that one color is on the inside ring, the second color is on the middle ring, and the remaining two colors are on the outside ring.

Union Knitting Saves Money

When Union Knitting Mills, Philadelphia, Pa., expanded two years ago, a materials-handling system was installed that increased output 35% without adding machinery or personnel. The conveyor, which cost over $10,000, has already paid for itself several times.

Manhours previously spent by 10 men in materials handling or 400 hours a week now goes into direct production. At the minimum rate of $1 per hr., this change represents a saving of over $20,000 annually.

The overhead conveyor system runs 1,500 ft. through the plant with a maximum speed of 25 ft. per min. The upper unit services the fourth floor and dips down to the third floor but completes its cycle on the fourth floor. The lower unit services the third floor and runs down past the second floor to the ground floor and returns to the third floor.

Economical to operate, the conveyor is powered by a ¾-hp. motor compared with the 7-hp. motor needed for the elevator.

Tilt tables in the sewing room have speeded production, and a separating machine is helping to boost the separating of sweater bodies to 100 doz. per day.

Philips Knits More Sweaters

At Philips Knitting Mills, Bronx, N. Y., eight regular interlock knitting machines have been rebuilt to knit sweaters. The results were 3,500 doz. long-sleeve sweaters produced each week from the eight machines.

The machines have 30 feeds and run at 23 rpm., and they do not slow down for changes in knitting. One knitter operates three machines on each shift, while one mechanic services the same number of machines but works on the day shift only.

This type of machine is now made by several builders, and the production potential is more than double that of older machines although the design possibilities are more limited.

Ladd Makes More Sweaters

About $1-million has been spent by Ladd Knitting Mills, Inc., Reading, Pa., on new plant and equipment during the last three years. This expenditure has enabled the mill to increase its production to more than 3,200 doz. full-fashioned sweaters weekly.

Most expenditures have gone for full-fashioned knitting machines and flat machines to knit cuffs and trimmings. Most of the plant is now air conditioned, which is paying off in greater worker efficiency. Ladd has invested considerable money in research and promotion of new styles from new fibers, which is paying off in busy machines.

tricot

Blue Ridge Speeds Warping

Blue Ridge Textile Co., Inc., Bangor, Pa., now inspects all yarn before the yarn goes on the knitting machine with a photoelectric inspecting device. The job is done on the warper between the creel and the warper head.

Before the installation, one girl at each warper watched the warp sheet as it ran to the beam over a black cloth. To do this job effectively, the warp had to be run at the slow speed of 150 yds. per min.

With the aid of the electronic devices, the warp speed has been increased to 280 yds. per min., and one girl now attends three warpers.

Quality has not been lowered because the device stops the warper when bad knots, slubs, and loose filaments

pass the device. These faults are removed from the warp before the warper is started again.

The yarn inspector has not eliminated the creel stop motions, and static eliminators have been added to counteract the static electricity induced by the additional bars and reeds.

Domestic Lace Speeds Warping

Domestic Lace Mfg. Inc., Englewood, N. J., improved warping for cotton yarns that are used to knit thermal-knit fabrics with a new warper that runs at speeds up to 575 yds. per min. One man runs the warper and also inspects for broken ends.

The beams are 50 ins. wide and hold 22,000 yds. of yarn. Yarns run are 20s, 22s, and 30s combed cotton, and each beam holds 415 lbs. when full. These beams last a full week on the knitting machine.

The 324 ends of yarn are run off three creels that are battery creeled by another operator. There are no stop motions. If an end breaks, the operator stops the warper and places a yellow ticket in the warp to warn the operator.

Fischer Modernizes Tricot

Fischer Mills, Inc., North Bergen, N. J., has improved fabric quality and made operators' work easier with faster tricot machines, photoelectric stop motions on tricot machines, and magnetic tensions on warper creels.

The stop motions are particularly useful on the 168-in. Reading machines, which knit at 800 courses per minute to knit about 18 ins. of cloth per minute. Even with few machines to watch, the operator could not patrol the machines to keep faults caused by ends out and broken needles below 12 ins. The longest faults are now less than 3 ins.

The magnetic tensions have been fitted to two creels, and they help to keep tension constant on all ends of yarn. Results are better beams that produce tricot cloths with fewer shade marks caused by uneven tensions.

CLOTH ROOM

new cloth rooms feature labor saving

Handling costs in cloth rooms can run high if manual labor is the prime source of energy. Progressive mills have made important changes in their cloth-room operations. Results—

- **Better inspecting**
- **Lower costs**

Today's cloth rooms are beginning to resemble automobile-assembly lines more and more. The worn-out weaver with a stevedore's truck, and machines equipped only for stop-and-go inspection have given way to power hoists, conveyors, and more-efficient inspecting machines.

Mills have long recognized the cloth room as a necessary but expensive part of mill overhead, and modern mills have made many worth-while changes from the old methods.

Take Spartan Mills' Beaumont plant. Its old cloth room had 15 inspecting machines served by three men on each of three shifts. These men put on new rolls and removed the inspected fabric. The machines were stopped for some time during these operations.

Now, with a rack behind each machine, two rolls are positioned for inspection; and when one is run out, the end of the new roll is pinned to the end of the old roll to avoid rethreading the machine.

Individual pieces are doffed by the inspector from a simple batcher and fall on a conveyor that takes them to a sorting station from where they go to storage.

The plant added nine more machines and went to a two-shift operation. It still produces about 600,000 yds. of cloth per week. Inspection is better, and the operation is done with three less employees, who were transferred.

case studies

Clinton's New Cloth Room

Clinton Cotton Mills, Clinton, S. C., double-checks its production in a modern cloth room located between two weave sheds. Cloth is cut from the looms in 400- to 500-yd. rolls, which are sewed into 3,000-yd. rolls at the brushing and shearing units. Scrays permit continuous operation while the rolls are sewed on.

Power hoists and a monorail system are used to get the large rolls to the inspecting machines and then to hookers where they are given a second inspection after they have been hooked off. Some fabric is inspected and rolled.

Air guiders produce evenly wound rolls in both types of inspection. Up to 1,400,000 yds. per week is handled with 43 employees in this cloth room.

Avondale Improves Its Cloth Room

A new building, new equipment, and improved machine layout increased Avondale Mills' Bevelle Plant's cloth-room efficiency by at least 20% at Alexander City, Ala.

This plant cuts 150-yd. lengths from the loom, mostly in fairly heavy fabrics such as tickings, drapery goods, gabardines, twills—some 50 styles in all. About 600,000 yds. of cloth are inspected weekly on a two-shift system that requires a total of 38 operators. Quality and production are maintained by a system that is designed to reward good work with cash bonuses.

A conveyer takes inspected rolls to the next department, where they are brushed and sheared and made up into 1,000- to 1,200-yd. rolls in the various styles.

PLAN '59

Fast Handling Helps Reeves

Eagle & Phenix Div., Reeves Bros., Inc., Columbus, Ga., gets goods from loom to inspection machines as fast as possible. Quick inspection reveals weaving faults before much more yardage is affected.

Cloth is delivered to 24 inspectors ranged at two rows of 12 tables. A conveyor receives all graded cloth as it is produced and takes it to a platform where the firsts and seconds are separated by styles and placed in trucks.

Prompt inspection and a minimum of manual handling help keep this plant's quality up and cloth-room operating costs in line.

Woodside Cuts Manual Handling

Goods passing through the cloth room at Woodside Mills' Simpsonville, S. C., plant are lifted manually only twice, once from weave-room trucks and once when individual cuts go into packing cases.

This plant runs the loom cuts into 1,000- to 1,200-yd. rolls and shears the goods before inspection.

Power hoists take the rolls by a monorail system to the grading machines. When a cut is graded, it is dropped on a conveyor that takes it to the shipping area. First-quality goods are cased at this point. Seconds are separated for regrading and put in a bin until enough pieces in one style are available for casing.

CHEMICAL TREATMENT

chemical-treatment advances show way to profits

Finishing plants that are making money today are doing so because they've kept in mind several factors of primary importance to successful operation. These plants have—

- **Kept abreast of technical developments**
- **Improved product quality**
- **Reduced unit labor cost**
- **Cut out wastefulness in the use of water, steam, and supplies**

Plants making money today in the finishing business are doing so because they are willing to adopt new ideas that improve product quality or cut processing costs.

Just as success breeds success, quality improvement often follows on the heels of a cut in processing costs. The change in method or an improvement in the machinery necessary to do the job very frequently raises quality at the same time the production cost is lowered.

The quality angle has become increasingly important in recent years.

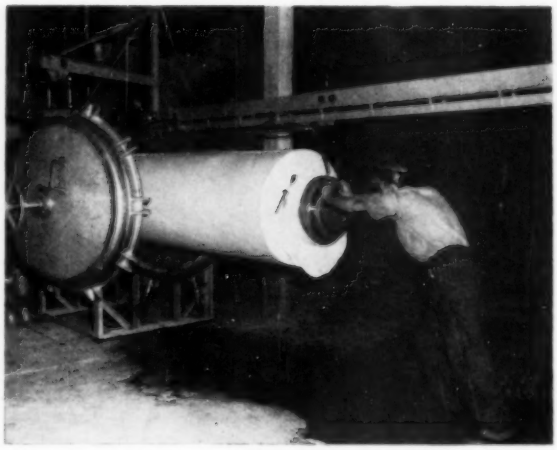
Management in the successful plants has hopped on every opportunity to cut costs and improve quality as fast as methods or machines have been developed to accomplish these ends.

There are other reasons for the success of the plants that are consistently busy and are turning in a profit for their owners. But in the last analysis, it is in the field of lowered processing costs that the harvest can be reaped.

The chances for modernization that can bring lower costs and better work are many.

Some mills have cut unit labor costs in drying operations by 50%.

Others have brought down warehousing and materials-handling costs very sharply.



PRESSURE DYEING is one answer to the need for better penetration and more production in dyeing the hydrophobic fibers. This unit is successful in handling Arnel tricot at a southern plant.

Improved continuous bleaching methods save one mill 50% of previous costs for materials.

Automation in color control coupled with continuous dyeing has raised quality and cut costs for a large hosiery mill.

Alert management is saving on chemical costs, hot water, and steam by utilizing recovery systems and heat exchangers in several plants.

How Mills Have Improved Washing

Washing at various stages of fabric finishing is an important step and one that has only lately come in for some serious study.

Bleacheries are perhaps the largest users of water, and the existence of a good natural water supply determined

the location of most of the older plants. In many cases, water could be taken directly from a clear stream and used without treatment.

Such situations are nearly nonexistent today. Practically all naturally occurring water and most water from deep wells must be treated to some extent before it is fit for use in a bleachery or dyehouse.

So the economical use of water has become more and more important. Bleacheries still require large quantities of water but use it more efficiently.

The newer designs in rope washers reduce tension to a considerable degree over the old-type log washers. Less tension gives two benefits: less water is required to do a good job, and wear and tear on the fabric is much reduced. Less power is needed to keep the low-tension machines running, and maintenance costs are lower.

Better Drying Ranges Cut Costs

Textile drying has always been an important cost factor in producing finished goods. Hot air and direct contact of cloth with hot metal are still the preferred methods.

Contact dryers for many years had few improvements. Then stainless steel made it possible to build stronger cans that would withstand 50 to 60 lbs. steam pressure. Anti-friction bearings and efficient condensate-removing equipment are now standard in modern can-dryer installations. Improved drives have made it possible to operate 65 or 70 cans with no more power than was required for the 25- to 30-can stacks that were once standard equipment.

Labor savings are proportionate. One Southern plant now uses one stack of stainless-steel cans that dry three strands of 40-in. fabric at 200 yds. per min. Continuous operation of this unit can produce up to 5-million yds. in a six-day week, enough to serve the primary drying needs of the entire plant. Three men tend this dryer, which replaced three stacks of old-type equipment, each requiring two men.

Heat Recovery Saves Money

One of the largest items of operating expense in a finishing plant is process steam, and only in a comparatively few U.S. finishing plants is there really economical use of the boiler plant's product.

While it is common practice to return condensate to boiler-feed, most of the heat units that go into heating water directly for washing or dyeing are thrown away with the waste water when baths are overflowed or dumped.

Very worth-while savings are being made in a number of plants that use heat exchangers to recover heat from waste hot water.

Warehousing Operations Improved

Modernization can often start in the warehousing operation that is so large a part of the fixed expense of most finishing plants.

The mechanical equipment for handling bales and rolls that is available today makes it possible to utilize overhead space to a great extent.

In modern warehousing operations, each bale or roll is instantly accessible, which speeds up the assembly of bales into lots for processing and eliminates the extra handling and restacking formerly necessary to locate and extract wanted bales from several thousand on hand.

CASE STUDIES

bleaching

Millville Updates Washers

An example of improved washers that have been installed in an old plant can be seen at Millville Mfg. Co., Millville, N. J. Here old-style log washers in the bleaching range have been replaced by low-tension washers. One of the new washers does the work of two of the old type and does it better.

Flow meters and temperature controls help standardize washing conditions so that a uniform effect is produced.

William Carter Eliminates Tension

The William Carter Co., Barnesville, Ga., bleaches and dyes tubular knitted fabrics. Washing and scouring are important operations in the production of their finished goods and must be done with a minimum of tension.

This plant uses modern tensionless washers before and after peroxide bleaching. Goods go through in rope form, and tension is kept at a minimum by reels that are surfaced with rubber slats. If tension develops between strands, the slats on the take-up reel are depressed, thus reducing the reel diameter with the result that the surface speed of the reel is lowered and the tension is reduced. Better washing and unstretched fabric are the results of this washing system.

Joanna Western Shortens Process

Continuous-bleaching systems are almost universal in the major bleacheries, and they generally use hydrogen peroxide as the bleaching agent. The original two-stage systems took up considerable space and were quite expensive to buy. J-box design has been improved considerably in the past three years; so a number of plants have found that desizing and a short prescour are sufficient to prepare goods for bleaching. Only one J-box is used in this system, and its improved preheater helps materially in getting better results.

Joanna Western's bleachery recently installed a modified single-stage system of this type. The singeing and desizing unit delivers goods to a short J-box where they remain for 30 mins. and then go to a low-tension rope washer to scour out converted starch. The next step is peroxide saturation followed by a layover in a J-box for 1½ hrs. at 204 to 206° F. The goods are then washed out in two low-tension hot-water washers and are dried.

The layout of this range is so compact that only two operators and a helper are necessary to produce 200 yds. per min. of fully bleached fabric, although the singer is located in another room from the bleaching range.

Union Discards Batch Bleaching

A continuous peroxide-bleaching range at Union Underwear Co., Campbellsville, Ky., cut costs and improved quality.

This setup is a single-stage range that produces up to 145,000 lbs. of bleached knitted fabrics per week on a three-shift five-day basis. Two operators per shift handle the range, one at the entering end and another at the delivery end.

The advantages over former batch-bleaching methods include a more-uniform product and considerably less labor per pound of goods produced.

PLAN '59

Chlorine Plus Peroxide Cuts Cost

Another successful attack on bleaching costs has come from combining chemic with peroxide in a continuous system. Goods are singed and desized and given a prescour or the usual caustic treatment in the first stage of a two-stage system.

Then they are washed and saturated with a weak hypochlorite solution and squeezed out into a J-box where they lie for 10 to 20 mins. The goods are then pulled directly into a peroxide saturator. The peroxide solution can be cut 25 to 75% from the normal strengths. The usual holdover in a J-box precedes final washing.

This method has worked out to save up to 50% in chemical costs. In addition, troubles from accumulated silica deposits are practically eliminated.

Dominion Has Giant Range

A major step in bleachery improvement was taken by Dominion Textiles Ltd. at its Magog, Que., plant when the largest range in the world was installed two years ago.

This range singes, sours, mercerizes, scours, and bleaches in one operation. The mercerizing operation can be skipped if desired.

The goods handled on this machine are mainly 1.80- to 2.75-yd. twills and drills.

Prior to the installation of the range, these goods had to be prepared on jigs because they cannot be roped; and labor costs, losses from jig ends, and variations in quality were excessive.

The new bleaching system produces about 55 yds. per min. of bleached, mercerized (if wanted), and dried fabric that is uniform in quality. There is a minimum of waste, and labor costs per yd. are less than by batch methods.

drying

Boger & Crawford Cuts Drying Time

The biggest bottleneck in packaged-yarn dyeing has been the drying operation. The dense package gives off moisture slowly, and the majority of drying equipment in use today requires 4 to 6 hrs. to dry a batch of dyed yarn on port dryers. Some cabinet-type dryers still in use require an overnight period to do the job.

When a U. S. manufacturer came up with a greatly improved yarn dryer, Boger & Crawford, Philadelphia, Pa., installed one in its dyehouse. The machine puts a terrific volume of filtered air through the wet yarn packages and cuts the drying time to about 40 mins. Quality is improved, too, because the yarn dries rapidly enough to forestall color migration.

American Thread Speeds Drying

A German-built yarn-dyeing system is doing a good job for American Thread Co., Sevier, N. C.

The actual dyeing operation is done in a pressure kier; but scouring, aftertreating, and drying are carried on in auxiliary kiers placed adjacent to the main dyeing kier. In this way, the most expensive piece of equipment is kept busy on the most-important job.

The dryer is a high-speed type that requires only 30 to 40 mins. to dry a 500-lb. load of yarn. Recirculated air is used in this system, which includes a condenser that squeezes out the moisture from the air before it is reheated and pumped back through the yarn. One man tends the entire layout.

Sidney Blumenthal Goes to 158-ft. Range

Sidney Blumenthal & Co. finishes heavy upholstery and pile fabrics at its Caromount plant at Rocky Mount, N. C. Fabrics of this type that weigh up to 16 oz. per sq. yd. are difficult to dry; and on the old equipment at the mill, 8 to 10 yds. per min. was about the top speed possible.

Management installed a single-pass tenter with a combination pin and clip chain to overcome the drying bottleneck. The new range is huge: the housing alone is 158 ft. long, and the hot-air supply is generated by 28 10-hp. motors turning 56 radial-flow fans.

Goods up to 120 ins. wide can be handled on this range. Automatic temperature and speed control are provided. If goods are not pinned properly, the frame shuts down automatically.

The housing is a departure from American engineering practice. It does not extend to the floor and is only about 4 ft. high. There is much less volume of air to be heated in this type of construction.

The frame will dry 16-oz. goods at 40 yds. per min., and its automatic-control features contribute considerably to better quality.

Ohio Falls Cuts Labor 50%

Another example of how a modern drying range can cut costs can be seen at Ohio Falls, Inc., Louisville, Ky. This plant handles ducks, abrasive cloths, and heavy fabrics generally. One of its important lines is backing cloths that are coated with abrasives.

Originally these fabrics were brushed to remove loose lint; and then they were taken to a pad where a heavy mixture of starch, gum, and hide glue was applied. Direct color was also added if required. Then the goods were dried and returned to the pad for a second run in finish, followed by a final drying.

Now this job is done in one run on a range that consists of two pads and two stacks of cans. Production of the unit is 30,000 yds. in 8 hrs. and requires about half the labor formerly needed.

Union Textile Printers Adds Infrared Units

Union Textile Printers, Secaucus, N. J., solved a production problem on resin-finished goods by adding a bank of 12 multifrequency infrared units over the goods at the delivery end of the finishing tenter.

Although the tenter was of modern design, it could not dry and cure the resins at much above 10 yds. per min.; so a second run was necessary to finish the job.

With the auxiliary unit, the dried cloth is heated to a high temperature almost instantly and the resin is cured so fast that a production of 50 to 60 yds. per min. is possible and the second run is eliminated. The added equipment requires no extra room and does the job by heating the cloth directly rather than through another medium such as hot air. The unit consumes about 60 kwh. of electricity.

dyehouse improvements

Automatic Color Matching

Truly automatic color matching has been achieved in at least one phase of dyeing. The development is a part of an automatic hosiery-dyeing machine that is in operation in a large Eastern plant.

Full-fashioned nylon women's hosiery is completely scoured, dyed, finished and boarded to shape by this machine, which in its fully developed state can produce up to 100 doz. pairs of hose per hour. The first model's short reaction chamber produces 50 doz. pairs per hour.

The advantages of the machine, for a large plant, are less handling and more-uniform shades. Labor requirements are less per 100 lbs. of hose because there is no bagging, ticketing, extracting, debagging, and drying to be handled by manpower.

Conveyor Cuts Dyehouse Labor

A large hosiery mill cut labor costs and increased efficiency when it put in a conveyor system that keeps machine operators at their posts and simplifies the dyer's work.

All instructions from loading in to removing the finished lot are brought to the machine operator by means of a conveyor that runs around the dyehouse, through the dyer's office, and through the color shop.

How the system works can be seen from what happens in a typical step in the dyeing process:

When a load is ready to sample, the operator attaches the sample with its machine number to the conveyor. The color matcher checks the shade; and if any adds are necessary, he makes a note on a special form and attaches it to the conveyor.

Color-shop employees take these notes as they come along and weigh color into boxes to correspond with the dyer's instructions.

The tightly closed boxes are put on the conveyor, and the operator picks up the box marked for his machine. He boils up the color on the spot and adds it to the machine.

Any other step in the process is handled in the same way. Written instructions to the operator help avoid the errors that sometimes occur when verbal orders are given.

The conveyor makes possible the division of labor so that each employee can devote all his time to his specific duty. The operators now handle twice as many machines as was possible when they had to walk several miles a day between machines, office, and color shop.

Screen Printers Raise Production

Screen printing, once entirely a hand operation, is being steadily mechanized. At this time there are at least 24 screen-printing machines in operation in the U. S. The great majority of these machines have been developed in Europe and vary slightly in principle and production potential. Some limitations are imposed on screen printing when it is mechanized, but the machines are very successful and can produce a variety of color effects on many styles of fabrics that are hard to tell from the hand-printed product.

The machines increase production very considerably. Bernard Screen Printing Co., Brooklyn, N. Y., recently put into operation a screen-printing machine that, with two men, equals or betters the production possible on its six hand-screening tables. Actual production in either case varies with the number of colors in the pattern; but on four-color work, Bernard's machine will produce up to 4,400 yds. in an 8-hr. day.

Now, Continuous Screen Printing

What is probably the final basic change in screen printing is the continuous rotary screen printer now in operation at Avakian Textile Printing Co., Woonsocket, R. I. All other screen-printing machines operate on a stop-and-go basis, but this machine produces 35 to 40 yds per min. continuously. Furthermore, it will produce a 72-in. repeat in four colors or a 27-in. repeat in eight colors.

Avakian can now handle very large orders more promptly and at much less cost per yard than is possible on the nine tables that are also used in its operation.

Drug Rooms Get Attention

Modern dyehouses have converted old, messy, and inefficient drug rooms into clean and efficient dispensaries of the expensive materials that they handle.

The trend is toward locating the drug room on a mezzanine floor and isolating it from the dyehouse as completely as possible. The high location permits gravity flow of dye and chemical solutions. Isolation reduces the chances of contamination from loose color flying about.

American Thread Co., Sevier, N. C., has a modern drug room of this type.

Color mixers receive orders from the dyehouse office below and dissolve dyes in portable stainless-steel tubs. The tubs are charged with dye or chemicals at the weighing station near the supplies, which are kept in the center area of the room.

Then the tubs are wheeled to one of the delivery stations that are located along the walls. Here steam and water piped through flexible hose are available to make up the solution.

When the charge is ready, the tub is connected to a delivery pipe that terminates at the dyeing machine.

This plant also uses meters to deliver basic chemicals such as caustic, peroxide, and brine in exact quantities from large storage tanks.

Except for stainless-steel fittings, the chemicals and dyes are delivered to the machines in glass pipe, which is easily flushed clean and does not corrode.

The ventilation system connects with the central air-conditioning system for the plant. Filters remove any dye particles that may be entrained; so flying dye is no problem in this plant.

heat recovery

Alabama Plant Cuts Steam Costs

One plant in Alabama that was originally engineered to include heat exchangers on its two bleaching ranges, three dyeing ranges, and a mercerizer figures its savings at 30,000 to 40,000 lbs. of steam per hour. The original boiler equipment was rated at 80,000 lbs. of steam per hour; so it is obvious that the heat exchangers were the equivalent of another boiler in that case.

Heat exchangers generally pay off their cost in 16 to 18 months, and they require little or no maintenance or labor to do their job.

Gregg Mill Has Heat Exchangers

All hot waste waters from the dyeing ranges, jigs, and

PLAN '59

mercerizers at the Gregg Plant of Graniteville Co. are led to two heat exchangers. An average of 50,000 gals. per hr. of incoming fresh water gains 42° F. in this system.

The plant saves 420-million Btus. per day, which is the equivalent of at least 20 tons of moderately good coal burned in an efficient boiler. Dollar savings from heat exchangers will vary with plant location, fuel costs, and over-all efficiency; but in any case they are impressive.

Caustic Recovery Cuts Costs

What might be termed a return to first principles has prompted some plants to install triple-effect evaporators to recover and reconcentrate wash waters from mercerizing ranges.

The idea and the necessary equipment are far from new, but finishing plants have overlooked the potential savings for nearly 50 years.

Increasing chemical costs and the need to reduce stream pollution have pointed up the value of caustic recovery. One South Carolina plant figures its benefits from wash-water recovery three different ways: less inventory of new caustic, cheaper caustic, and less chemical costs for treating plant effluent.

A Georgia thread plant figures that it recovers 97% of the caustic that is used for mercerizing. The rather extensive caustic-recovery system at this plant is also engineered to recover the heat from the condensing system of the evaporators so that savings in hot water for process cut operating costs very substantially.

warehousing

Blumenthal Mechanizes Handling

At the Caromount plant of Sidney Blumenthal & Co., a new warehouse was built in a central location and equipped with racks to hold gray goods on pallets six high. The inspection area nearby is served from the storage area by power trucks. Inspected goods move on a conveyor to the make-up area. The finished-goods warehouse was also re-engineered to hold more goods in special packages.

The changes produced impressive labor savings: one man with a power truck can load a truck of finished goods in 20 mins. Prior to the changes, it took six or eight men 2½ hrs. to do the job with hand trucks.

Southern Bleachery Centralizes Operations

Scattered storage facilities, duplication of effort, and excessive labor costs were eliminated at Southern Bleachery and Print Works when it centralized packing, put-up, and finished-goods warehousing operations. Continuous flow has replaced the older stop-and-go methods that involved considerably more labor.

Goods from the hookers are put on a conveyor that takes them to an automatic tying machine, from which they are conveyed to the shading bench. Special trucks receive the shaded lots, and a corrugated paper carton is placed over the goods. The trucks are moved by a carousel conveyor to the packing station, where a special jig upends truck and carton and deposits the carton on a roller conveyor. The open end is sealed, and the goods proceed to final weighing and strapping.

Connecticut Dyer Cut Labor Costs 70%

A Connecticut commission dyer centralized and mechanized warehousing of gray goods and supplies and saved 70% of previous labor costs for these services.

A very tight layout for bale storage enables the plant to handle goods in 40,000 sq. ft. where previously 120,000 sq. ft. were required in three different locations. Bales are stacked five high in separate bins by compact electric lift trucks. A great advantage of the new system is that each bale is accessible at any time.

Heavy chemicals consumed by the dyeing and bleaching departments are distributed direct to point-of-use areas by fork trucks that have all but eliminated the need for manpower to handle this type of supplies.

CHEMICAL-TREATMENT CONTROL

instrumentation—the basis for better processing

Today smart management in the chemical-treatment phase of the textile industry is relying on instruments rather than on human judgment for process control. The complex machines and the new dyeing and finishing techniques require automatic controls to—

- **Maintain quality**
- **Assure uniformity**
- **Reduce cost of labor and supplies**

In the constant battle to produce a better piece of goods for less money, the successful finishing plants have found that it takes more than a good eye and a well-developed sense of touch to insure product quality and uniformity.

The improvements that have been made in chemical treatment have been made possible in large part by applying automatic controls to a number of processing steps. The need to substitute instruments for human judgment developed along with the large continuous processing ranges and the more-complex chemistry and technology that accompanied them.

It became apparent also that older and simpler processes

could benefit by instrumentation.

Two important things can happen when instruments replace human judgment: (1) product quality goes up and (2) costs go down. Sometimes both effects occur, and it is a rare process that is not bettered in some way by automatic control.

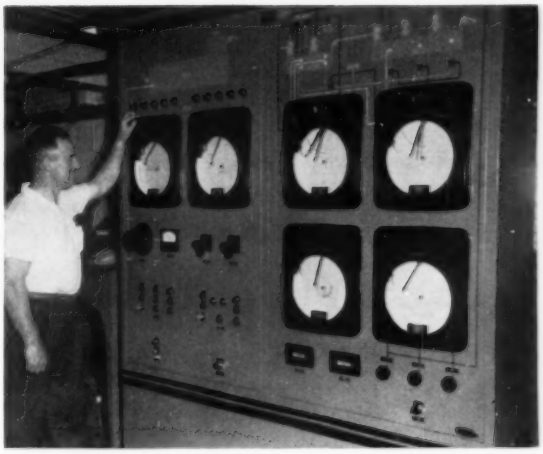
Quality generally improves under automatic control because operating conditions do not vary. It is also possible to recreate optimum operating conditions from lot to lot, which aids uniformity.

Costs go down for several reasons. Steam, water, and chemical supplies are metered to the immediate need only at the necessary rate. Labor costs go down because many automatic controls can be overseen by one operator.

Reprocessing costs are much reduced. Automated machines don't forget to replenish a pad box, keep water hot, maintain dryer temperatures, or see that nip pressures are constant.

And if something goes wrong, the properly instrumented machine will shut down before too much damage is done to the goods.

The chemical-treatment branch of the textile industry was slow to adopt the idea of automatic control, but today it is rapidly catching up.



TYPICAL CONTROL PANEL for a modern continuous peroxide-bleaching range is one of several interconnected units in this installation, which is nearly 500 ft. long. Temperatures and pad-roll pressures are kept uniform by automatic control.

case studies

Controls Help Vat Dyeing

Standard Bleachery, Carlton Hill, N. J., operates a continuous vat-dyeing range equipped with the Marhen system of indicating the redox potential in the reducing or chemical pad. The plant has found that this device plus a flow meter for caustic feed and a positive variable feed for hydro provides excellent control of the critical vat-reduction phase of the operation.

The constant record of the recording potentiometer is valuable in spotting conditions that existed at any time during a run and serves as a reference guide for repeat runs or for similar shades. The caustic flow meter and hydro feeder maintain optimum dyeing conditions without waste.

New Finishes Need Close Control

The resins that make up a large part of present-day cotton finishes require control in processing to a greater extent than the old starch-and-oil finishes.

Pontiac Bleachery makes sure that special resin finishes come off the drying tenter at exactly the right moisture content by means of a control system that regulates the tenter speed automatically. For finishes that are calendered or embossed before curing, it is important that the fabric carry 15 to 20% moisture before it is calendered. Guesswork produced irregular results. The automatic control keeps the wanted moisture content uniform at all times.

A further advantage of this type of tenter-speed control is that, for normal drying, tenter production can be kept at a maximum and overdried goods are eliminated. Less steam is required on a range that is equipped to dry properly without overdrying.

Blumenthal Groups Instruments

The Rocky Mount, N. C., dyehouse of Sidney Blumenthal & Co. has all dyebeck instruments located in the dyer's office.

The recording controllers for 37 dyebecks are banked solidly against one wall of the dyer's office. The temperature conditions and the patching interval in any beck are thus instantly available to the dyer at any time, which saves him the trouble of walking out to the machine to find out if instructions are being carried out.

Instrument maintenance is also simplified by grouping all instruments away from traffic, excess humidity, and machine vibration.

Machine Controls Dye Shade

A shade-control system that so far has been applied only to hosiery dyeing has enormous potentials for any continuous dyeing system in which the dyes are applied in what is essentially their true color while they are in solution.

This unit, which is working successfully in a large Eastern hosiery mill, is based on a spectrophotometer that has been developed to the point where it analyzes the color value of each component in a shade every 4 secs. and relates its findings to a preset value.

If the component is lacking in color strength, the instrument actuates pumps that inject a charge of that color into the working liquor. So far, dyers decide if the shade produced matches the standard; but it is obvious that comparative spectrophotometry between sample and standard, with automatic adjustment, can conceivably eliminate color matching as a human skill.

Pyrometers Control Heat-Setting And Monitor Resin Curing

An Eastern mill has much better control of the critical operation of heat-setting nylon fabrics since it installed a radiation pyrometer to monitor the operation. The instrument indicates, records, and controls fabric temperature without contact.

Another pyrometer installation is keeping a close check on fabric temperatures in the infrared curing unit that is in use at Union Textile Printers, Secaucus, N. J.

The pyrometer responds to slight temperature variations within one second equivalent to the passage of 1 yd. of goods in this application. It is very important to know fabric temperature in this type of curing unit because the time element is very short and the infrared units generate much more heat than the fabrics could tolerate for long.

Frame speed is adjusted to the point where the pyrometer registers the exact temperature needed to cure the goods. The pyrometer is mounted about 4 ft. from the fabric and is not affected by ambient temperatures or air currents.

PLAN '59

TESTING AND MACHINE CONTROL

modern instruments pay off in better yarns and fabrics

• Electronics is improving textile testing so that spinners, weavers, throwsters, and knitters are doing better testing jobs on fibers, yarns, and fabrics in less time than when hand methods were used; and variations caused by the human element are being reduced.

Modernization in textile mills usually means higher production with higher speeds, higher drafts, fewer processes, and fewer workers. These factors tend to deteriorate quality; so modernization of testing equipment is vital to keep quality at as high a level or better than before the installation of the modernization program.

Electronics has done much to help textile mills to measure such things as unevenness, tension, yarn speed, and fiber diameter. These instruments do a better and faster job of testing fibers, yarns, and fabrics than the old hand and eye methods of testing.

Tension, for instance, has been a difficult subject to measure; but recent developments in tension analyzers are enabling mill men to solve many problems in spinning, slashing, and weaving.

These instruments are very sensitive, and they require a good knowledge of textiles to interpret the results. Some mills have solved the problem of where to position the creel rods on spinning frames for the best results, how to best adjust quillers, and when to change travelers.

Modernization Needs Testers

Evenness testers are used along with many mills' modernization programs to make sure that quality does not slide when a process is eliminated or speeded up.

Electronic spectrographs are now used to discover faulty cards. In one mill, variation dropped from 18.3% to 8.9% after the spectrograph showed up faulty cards that needed overhauling.

Electronics has been used to determine fiber fineness on an experimental basis, but more work is required in this field before wool classers will be put out of work. New fiber testers are, however, reducing the laborious time spent in the classification of cotton and wool fibers.

Modern instruments pay off in knitting mills with better-quality fabrics. These instruments measure tension, yarn speed, yarn length, and shrinkage and have changed knitting from an art to a science in some mills.

Instead of setting up knitting machines by rule-of-thumb methods, the yarn is measured as it is knitted. More and more tension meters are finding their way into knitting mills to help solve tension problems.

Shrinkage Is Measured

Shrinkage in knitted fabrics has been difficult to measure because of the unstable nature of these fabrics. Instruments are now available that measure recoverability of knitted goods under tension after washing. Results of the tests can be used to adjust knitting machines to the best settings for low shrinkage.

Hosiery mills are using new testing instruments to solve their problems. These instruments are largely used to help reduce length variations, and they displace the former hand methods that added variations caused by the human element.

case studies

Fitchburg Improves Roving

Fitchburg Yarn Co., Fitchburg, Mass., improved roving quality with a new tester that checks on the uniformity of twist, tension, and draft. The instrument works with an electronic evenness tester that determines linear evenness.

Ten yards of roving from each test bobbin are tested on the evenness tester, and 100 to 150 yds. are tested on the roving tester at 16 yds. per min. There is no direct relation between the findings of the two instruments, but they complement each other.

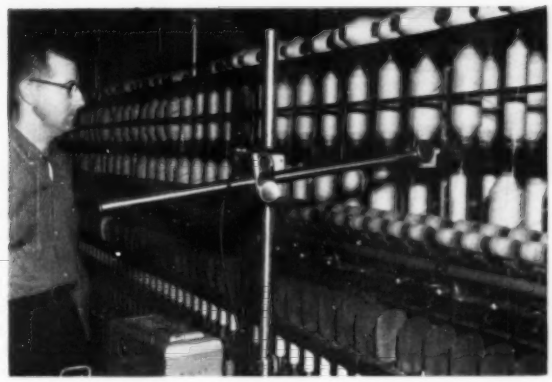
Readings from both instruments are analyzed and compared with each other. The method has proved useful in the production of high-draft roving. For example, roving might have an excellent degree of linear evenness and still produce bad yarn because the twist or draft uniformity is not good.

Kendall Tests Loom Efficiency

Loom efficiency is being checked electronically at one of The Kendall Co.'s plants. Machine and employee performance can be rapidly checked to ascertain the highest possible plant efficiency and the minimum in-process inventory.

A short-duration impulse switch on each loom is actuated by a pin on the pinion of the pick counter. The switch closes once each revolution of the pinion and provides a series of pulses related to units of production. These pulses are carried through cables to the data-receiving panel in the weave-room office. Computing of the results is done by an individual machine analyzer, a production integrator, or a standard typewriter.

A chronological strip-chart recording shows the time of each start, the duration of the run, the time of the stop,



TENSION ANALYZERS are among the latest electronic devices to help control quality in textile mills. Many mills are using such instruments to make sure that their modernization program, which usually increases production, does not allow quality to deteriorate.

and the duration of the stop. The total downtime is registered in tenths of minutes, and the total number of stops is registered.

Because the running production of all machines is known at all times, data can be set up quickly and comparisons and cost studies can be made rapidly to show which yarns or fabrics are not running profitably. Coupled with inventory information, the system shows where material shortages and bottlenecks are likely to occur.

Hanes Knits Better Fabrics

P. H. Hanes Knitting Co., Winston-Salem, N. C., is using modern instruments to test knitting machines. The result is more-even fabric than was possible under the old system of setting machines by marking the yarn with an oily finger.

Ravel tests showed that course-length variations from 64-feed machines ranged from 14 to 30% when knitting machines were adjusted by the old hand method. The new instruments have cut this variation to less than 6%.

When stitches are adjusted, a yarn-measuring instrument is used to determine the correct length of yarn knitted at No. 1 feed. The machine is run 10 revolutions, and the stitch cam is adjusted to knit the standard fabric.

An electronic meter is then applied to No. 1 feed to find the speed of the yarn. The remaining feeds are then set to No. 1 feed while the machine is running.

After a machine is adjusted, the next roll of fabric from the machine is given a ravel test. One course is removed at a time and measured. The percentage variation is calculated, and the machine is readjusted if the variation is too high.

Swift Cuts Testing Costs

Modern testing equipment at Swift Mfg. Co., Columbus, Ga., helps to keep costs low and quality high. An instrument used to determine fiber fineness cuts testing time almost one-third and increases accuracy by lessening fatigue.

A cotton sample is placed between special sample fingers in the instrument, and the weight of the sample depresses an indicator. A wheel is turned to bring a second indicator in line with the depressed indicator. This action adjusts the testing cylinder to the sample weight.

The sample is removed and inserted in a cylinder. The fineness reading is read on a dial, and the modulus is read on a vertical scale.

Santee Modernizes Wool Testing

Modern testing equipment at Santee River Wool Combing, Jamestown, S. C., is replacing centuries-old methods of testing wool fibers.

Fiber diameter of the wool is checked on a projector. Wool from the top is cut into $\frac{1}{4}$-in. pieces on a microtome and placed on a slide. The enlarged image of the fibers is projected on a screen, and a wedge card is laid over the fibers to discover their average diameter.

Fiber lengths are checked on an automatic tester every day. Finished top is placed under a feed roll, and pulls are made automatically and deposited on a series of toothed combs.

Two rolls remove the different fiber lengths, starting from the longest fibers, as the combs are dropped. The fibers are removed by a brush and weighed to give a true picture of the fiber diagram, which is then used to adjust machines.

Instrument Controls Card Web

James Watkins & Sons Ltd., Holmfirth, England, installed photoelectric-cell equipment on wool cards to keep the weight of the card web more constant. Better quality yarn resulted.

The cell measures the thickness of the card web from the doffer. When the thickness goes out of tolerance, the doffer speed is corrected to bring the card web back into tolerance.

The photoelectric cell is part of a measuring unit mounted directly on the card. The device measures the weight of the web by recording the intensity of a light beam passing through the web. The light is reflected back through the web by a mirror and is proportional to the change in the weight of the web.

This variation in light intensity causes a variation in the output of the photoelectric cell. A servometer is controlled from the photoelectric cell, and this motor controls the carding process through variable-speed controls.

Testers Help Spinners Ltd. Modernize

When Spinners Ltd., Huntingdon, Que., modernized its worsted operations to get better production, evenness testers were used extensively to make sure that quality did not suffer.

To make sure that roving twist was correct, tests were conducted on two lots of 62s yarns. Usual twist was put in one lot and less twist was put in the other lot. The rovings were spun with identical settings. Evenness tests showed considerable improvement with the lower twist roving and pointed out the need for more care in predetermining roving twist.

Evenness tests on sliver pointed out drafting waves that

affected yarn-size variation. These waves were traced to sliver pick-ups, and yarn quality was improved by changing the setup so that no piece-ups take place after the first operation.

Instruments Pay Off at Sapona

Modern stretch-yarn manufacturing calls for up-to-date testing procedures because of high spindle speeds and exacting heat conditions. Sapona Mfg. Co., Cedar Falls, N. C., uses stroboscopes and pyrometers to make sure that their machines produce high-quality yarns.

A stroboscope and a portable pyrometer soon paid for themselves by enabling personnel to check heater blocks and exit wheels rapidly. Spindle speeds are run at 33,600 rpm., and the stroboscope is used to check the number of turns of yarn around the exit wheels while the machine is running. The stroboscope also shows up other faults such as unequal yarn tension and improper threading below the heater box. Each spindle is checked every morning with the stroboscope.

The portable pyrometer is placed on a trolley and wheeled down each alley every week to check the heater blocks. Temperatures of the blocks are maintained at 388° F. for 60-den. yarns and 430° F. for 70-den. yarns.

Testers Improve Quality

A Southern print-cloth mill improved the quality of its products when it installed a uniformity analyzer. Uneven yarns in the spinning room were common, and faulty pickers were suspected to be at the base of this problem.

Four card slivers were tested. Each sliver represented a lap from a different picker. Every 25 ft. of sliver represented 3 ins. of lap because the carding operation had a draft of 100.

One of the slivers showed a nonuniformity of 44%, while the others ran around 31%. When the faulty picker was overhauled and the test carried out again, the results were all the same and yarn quality soon improved.

Claussner Controls Lengths

Electronic stitch counters solved the problem of keeping hosiery lengths even at Claussner Hosiery Co., Paducah, Ky. Lengths of full-fashioned and seamless hosiery are kept to within ½-in. tolerance with less time and effort spent than by testing with the old methods.

To keep full-fashioned machines in control, a set of stockings is tested with a meter on alternate days. Stockings are stretched over the rolls of the meter while the stitches are electronically counted at the rate of 40 per second.

The instrument is pushed to the knitting machine and adjustments are made to the machine immediately. The operator marks sections that need adjustment with a color code on a simple chart, and the fixer checks the chart.

Better results are obtained with the new device because 3 ins. of fabric are tested and the test is carried out while the fabric is under a controlled stretch. There are no errors in testing because of human differences.

Havsy Uses Tension Meters

Modern yarns used at Havsy Knitted Sportswear Corp., Brooklyn, N. Y., are requiring modern instruments to produce the best products. Such textured yarns as Ban-Lon require more precision in setting machines than spun yarns do.

Compensators are used on each feed of Havsy's interlock machines. The compensators help to feed the yarn to the needles at an even flow. The compensators are fixed one above the other in the yarn path above the yarn stand on the tension ring.

A tension meter is used on alternate weeks to keep the compensators adjusted, and the meter is used each time the stitch is reset. The compensators are adjusted while yarn is pulled over the meter from the cone so that all feeds are adjusted to the same tension.

ENGINEERING

modern plants and machines lead to greater profits

Wool mills have set the textile pace in building modern mill buildings and installing new machinery the last few years. Now these mills are ready to reap the profits with—

- Less labor
- Better yarns and fabrics
- Less materials handling
- Little building maintenance

The textile squeeze just past has put all mill men to thinking—how to increase future profits? Wool manufacturers faced this same question in the early '50s with two choices: (1) modernize or (2) get out of business.

Now 21% of woolen and worsted manufacturers are housed in new plants similar to that of Amerotron Corp. at Barnwell, S. C., that swung into production in 1956.

Today, these wool mills are ready to make substantial profits from (1) new and modern buildings that require a minimum of upkeep, (2) new machines laid out for best workloads, and (3) an eager work force.

A few other mills in this same category are J. P. Stevens and Karagheusian with new mills in Georgia and Deering-

Milliken, Bigelow-Sanford, Mohasco, and Albany Felt in South Carolina.

Wool-plant modernization followed a flurry of modern one-story man-made-fiber plants built between '47 and '53. Here again, Amerotron was a leader with more than half a dozen new plants in Georgia and North and South Carolina. Now Amerotron has no deadwood in plants or equipment, and there'll be minimum expenditures ploughed back for basic facilities.

Although wool mills have led the drive to manufacture fabrics at a profit, man-made-fiber and cotton mills have made limited expansions the past three years:

Alice Mfg. Co. at Easley, S. C., with a complete new 5½-acre cotton mill; F. W. Poe Mfg. Co., Greenville, S. C., with a complete new weave room and rehabilitated old mill; Springs Cotton Mills, Lancaster, S. C., with a 1,200-loom expansion; Cone Mills Corp., Carlisle, S. C., with a complete new 13-acre working-area $10-million finishing plant; The Kendall Co., Albertville, Ala., where $1-million was spent in modernizing; and Schwarzenbach-Huber in Altoona, Pa., and Front Royal, Va., with $1½-million modernization and expansion.

Successful Mills Plan for Profits

In these successful textile mills, every possible way to secure profits is being sought:

1. Machines and equipment that will use as little labor as possible are bought.

2. Materials and machinery are placed so there's as little materials handling as possible.

For example, two mills with large numbers of looms reduced the number of employees greatly during the past three years by installing new machines; and at the same time, they increased over-all productivity.

One of the mills cut the number of employees from 2,300 to 1,300. The second mill reduced employees from 2,400 to 1,750.

Mills erected during the first quarter of this century are being rearranged to improve the flow of product throughout the mill.

In many instances, a weave room is moved from the second floor to the first floor and the spinning room from the first to the second at the same time. These changes have required new flooring, motor and electrical replacement, better lighting and handling equipment, and air conditioning.

Old Mills Can Be Rearranged

Although multistory mills don't lend themselves to straight-line production as readily as single-story plants, they have definite advantages. For example, a mill rearranged with opening, picking, and carding on the top floor, spinning below, and weaving on the ground floor has to lift the product being made only once. Then much of the material flow is by gravity, the cheapest form of materials handling.

Well-designed lighting is a big factor in the trend to increased production and lower spoilage. Many relatively new mills and relighted old mills now have: (1) good systems of general illumination, (2) well-designed supplementary lighting, and (3) walls, ceilings, and other interior surfaces finished in light colors to reduce the high contrast between the visual task and the surrounding area.

Air conditioning is also important in a modern mill. Few mills are left that do not have or are planning either washed-air or central-station systems; and to compete with mills that have constant control of yarn conditioning throughout manufacturing, these mills will be forced to air conditioning.

case studies

Alice Mfg. Co. Builds New Mill

The latest ideas in building construction and machine layout for manufacturing print cloths are used in the 5¼-acre Elljean Div., Alice Mfg. Co., Easley, S. C., that swung into production in 1955.

Building features are: (1) one-story structure, (2) brick-and-steel windowless construction, and (3) flat roof.

The mill is laid out for straight-line production, and most equipment is new. Starting in the opening room, many products in process are handled mechanically: pneumatic pipes replace conventional feed aprons in opening, and pneumatic pipes feed reserve boxes in picking.

Large packages are stressed throughout the mill. Spinning-frame bobbins, for example, carry 60 to 70% more yarn than conventional bobbins. There are 180 of these large-package spinning frames.

In weaving, there are 1,200 new looms that run 174 ppm. Weavers run 100 looms, and loomfixers have 150 looms.

Cone Builds $10-Million Plant

A complete new $10-million finishing plant of Cone Mills Corp., Carlisle, S. C., started running in Jan., 1957, and moved rapidly toward a production potential of 100-million yds. of cloth per year.

Construction is of utility brick over a steel skeleton. Bays in the working area are 60x20 ft., made possible by supporting the roof on 27-in. I-beams that rest on 12x12-in. H-columns. Over 3,500 tons of steel went into the structural elements. The walls are 8 ins. thick, finished on the inside to a height of 9 ft. with green glazed tile.

Floors are of 8-in. reinforced concrete that will carry 300 lbs. per sq. ft. in the suspended areas. A special hardening finish was applied to give a smooth, durable surface.

Roof construction is of 2½x8-ft. precast-concrete slabs, topped by 2-in. insulation, and sealed with a four-ply tar-paper built-up roof, with a final coating of gravel.

Warehouse and main working areas have 30 ft. of head room, which simplifies machine installation and helps considerably to carry off excess heat. The warehouse is equipped with a monorail system to aid in loading and unloading the bins that are used for raw- and finished-goods storage.

The lighting system consists of 8-ft. units carrying two high-output fluorescent tubes each. Mounted 28 ft. from the floor, the fixtures give even illumination at the working level.

Heating units with automatic controls are on the roof and deliver heated air through ducts to working areas below as needed.

The plant has three 75,000-lb.-per-hr. coal-burning boilers and auxiliary equipment. The boilers evaporate 11.3 lbs. of water per pound of coal for an efficiency of 83%.

F. W. Poe Mfg. Co. Modernizes

A modernization program at F. W. Poe Mfg. Co., Greenville, S. C., in 1956 resulted in: (1) one card room to replace two, (2) underfloor card-stripping piping, (3) a conveyor system to carry material from cards through drawing, and (4) a new weave room.

The number of cards was increased from 162 to 192; and by grouping the cards in one room, job assignments

PLAN '59

are laid out better. In spinning, one-third more floor space was added to install filling spindles.

In the new weave room, there are 600 X-2 looms. Construction features include glazed-tile walls, maple floor, and insulated wood-decked roof.

Continuous-row fluorescent lamps furnish 30 ft.-cs. of light at loom level. The combination of glazed-tile walls and strip lighting gives a well-lighted room. The tile walls also cut maintenance costs substantially because the need for painting is eliminated.

Poe, with a total of 1,665 looms, manufactures products ranging from carded corduroys to combed lawns from 23s carded to 85s combed yarns.

Johnson Has New Air Conditioning

A central-station electrostatic air-conditioning system installed at Johnson Mfg. Co., Charlotte, N. C., in the fall of 1955 has improved yarn quality, decreased labor cost, and reduced machinery maintenance.

The system takes care of all air problems in a single package: it cleans soot- and smoke-laden air in winter and reduces excessive heat in summer.

The features of the system are (1) outside air is drawn through a bank of paper filters where the larger particles of dirt are removed, (2) an electrostatic precipitator "burns" dirt particles that get through the filter paper, and (3) the air passes through an oil filter before it is washed.

The spinning room is supplied with 47,900 cu. ft. of clean, refrigerated air per minute; slubbing, spooling, and storage receive 35,800 cu. ft. per min. The card room receives 57,900 cu. ft. per min. of filtered air through a separate fan-and-duct system.

Year-around temperature in all departments is 78° F., and relative humidity is 50%.

Kendall Plant Spends $1-Million

Early this year, The Kendall Co. completed a $1-million rebuilding program at its Albertville, Ala., plant; the program was started shortly after Kendall bought the mill in 1956. The objective was to produce premium-quality print cloth.

The mill was enlarged with a 42x130 building with basement, and all machines and lights were rearranged. The entire building was re-covered with a tar-and-gravel bonded roof; the roof is supported by steel columns and beams.

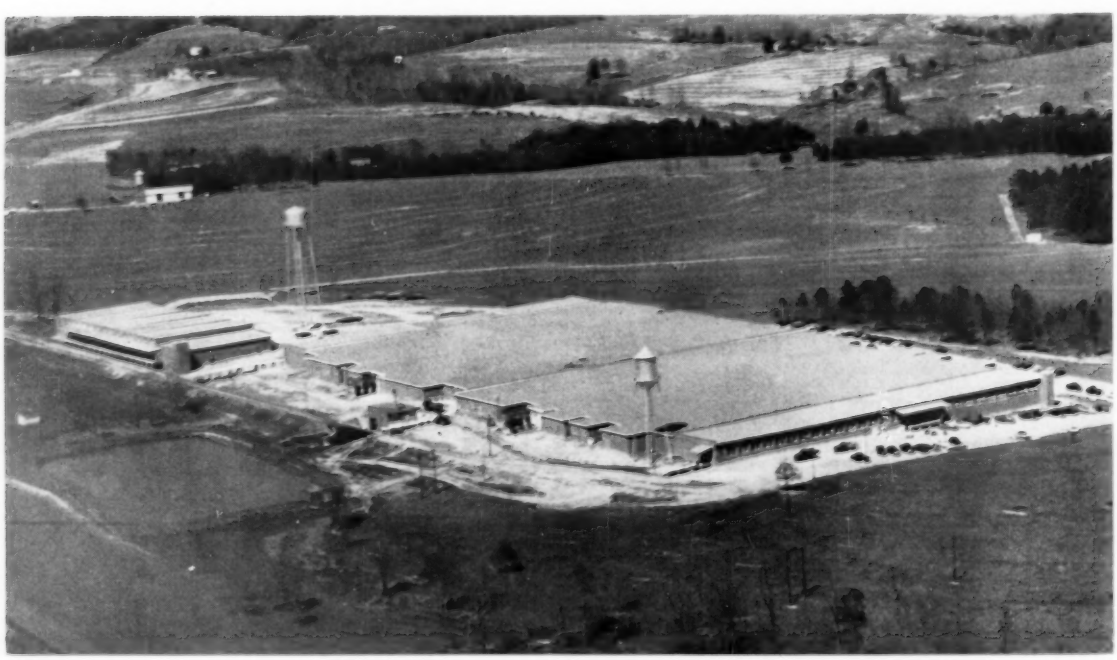
The supply room, machine shop, and cloth room were relocated. New electrical conduit and motor starters were installed in carding, spinning, and weaving.

In the weave room, a dry-duct air-changing system was installed, windows were filled with bricks, and atomizers were added.

The one-story building now has straight-line flow of materials, efficient machine layout, and room for further expansion.

Cone Mills Relights Weaving Mill

A new lighting installation completed at Cone Mills' Dwight Div., Alabama City, Ala., in December, 1956, is averaging 58 to 60 ft.-cs. of light with practically no maintenance. The installation covers 228,718 sq. ft. in two weave rooms, a cloth room, tying-in room, and yarn-wind-



5½-ACRE PLANT of Alice Mfg. Co.'s Elljean Div., Easley, S. C., is a one-story brick-and-steel windowless structure for manufacturing cotton print cloth.

ing room. A total of 4,466 4-ft. fixtures with 10% upward component was used.

In both weave rooms, an average of 58 ft.-cs. is maintained. The lighting level in the winding room is 2 ft.-cs. higher.

After a year of operation, little maintenance had been needed; only a few tubes had burned out. The only cleaning has been to blow off the tubes with compressed air once a month. The building was painted white when the new lamps were installed, and its reflective value is still high.

No records are available to show the specific gains from the new lighting. But William T. Curry, mill superintendent, says: "The new lamps have definitely improved fabric quality; we don't know how much because other manufacturing modifications were made at the same time.

"Fixers like the lights because they can see to make close adjustments on all parts under the looms. And weavers no longer complain that they can't see defects as fabrics are woven."

Modern Handling Sparks Dan River

Modern packaging machines, a complete new conveyor system, and the resulting layout with modern methods have increased packaging production 33⅓% at Dan River Mills, Inc., Danville, Va. Other mill benefits are higher sales from more-attractive packages and more-rapid service to customers.

An average of 6,000 styles of cloth is passing through the packaging department all the time, with 25 new styles introduced every day. From 4¼- to 4¾-million yds. of cloth are packaged each week. But goods flow smoothly by predetermined schedules.

Packaging takes up at finished fabrics and extends through five separate departments: (1) inspection, (2) open stock, (3) sewing, (4) put-up, and (5) shipping.

The conveyor system permits the smooth, quick flow of goods from one station to another. An electronically controlled chain belt separates large and small boxes so that large boxes run past a special strapping machine.

The operator merely starts the straps in guide slots; then he controls the entire cycle of tensioning, sealing, and cutting automatically. Overlapped strapping ends are sealed with spot welds. Smaller sizes of boxes are strapped by the same operator on a semiautomatic machine.

After being strapped, boxes to be shipped immediately are moved by the conveyor line directly to the shipping department.

Springs Saves With Computers

The newest electronic computer installed at The Springs Cotton Mills, Lancaster, S. C., is giving big gains in weekly payroll processing, cost data, supply purchasing, and sales information. When the machine was installed in mid-1957, it was the first machine in the Southeast and the first textile installation.

The new tape-recorder machine is used with 21 other machines at the Lancaster office to make most calculations for all Spring's mill. Springs' payroll of approximately 12,000 is maintained, calculated, and printed in 12 hrs.

Five other machines were ordered to further increase the efficiency of the tape recorder, which can perform as many as 78,000 additions and subtractions per minute.

Colonel Elliott White Springs, president, says this about the new machine:

"We have gone heavily into electronic-machine control for improved data to give our customers better service at the time they need the data.

Equipment Pays for Itself

"We expect to pay for the additional equipment we are adding by company growth and by normal loss in turnover of personnel. Last year, for instance, improved efficiency for our department paid for the conversion to new machines, increased rental of equipment, and increased record sheets and absorbed the growth of our company at a decreased cost to our company.

"Perhaps the most important gain in the use of the new machine will come in the future applications of billing, accounts receivable, raw-products accounting, inventory control, finished-goods records, and order allocation.

"We have already proved that the machines in our system are accurate, fast, flexible, and economical.

"There are numerous other areas of calculations that we plan to investigate to provide profitable extensions to our present electronic-data-processing activities. Our customers, employees, and stockholders will benefit as the efficiency of operation is improved."

New Boilers Pay Off Fast

Two new boilers at a Southern mill paid for themselves in less than two years; fuel cost was cut more than 50%.

The two 250-hp. self-contained boilers cost $38,400 and replaced four obsolete units. The saving on fuel for the first year of operation was $14,045.41; labor saving was $9,399.59. The total saving for the year was $23,445. Natural gas is expected to further cut the fuel costs by one-third.

Besides fuel and labor savings, other advantages are realized: absence of smoke, soot, ashes, and coal dust results in cleaner surroundings and reduced over-all maintenance costs.

Electrical Brakes Help Greenwood

Electrical brakes on 184 cotton spinning frames at the Greenwood Plant, Greenwood Mills, Greenwood, S. C., stop the frames quickly, smoothly, and positively. The braking units were added late in 1956; and since that time: (1) power cost has been cut, (2) frame downtime is reduced, and (3) little braking maintenance has been necessary.

W. L. Bross, chief engineer, Greenwood Mills, says this about the installation: "Since the units have been installed, there's been a reduction of maintenance cost of approximately $1,000 per year per 100 spinning frames.

"Power cost was reduced approximately 2,300 per year for 100 spinning frames. Estimated power cost for one unit for six frames is approximately $35 per operating year for 100 frames.

Saving Is $30 per Frame

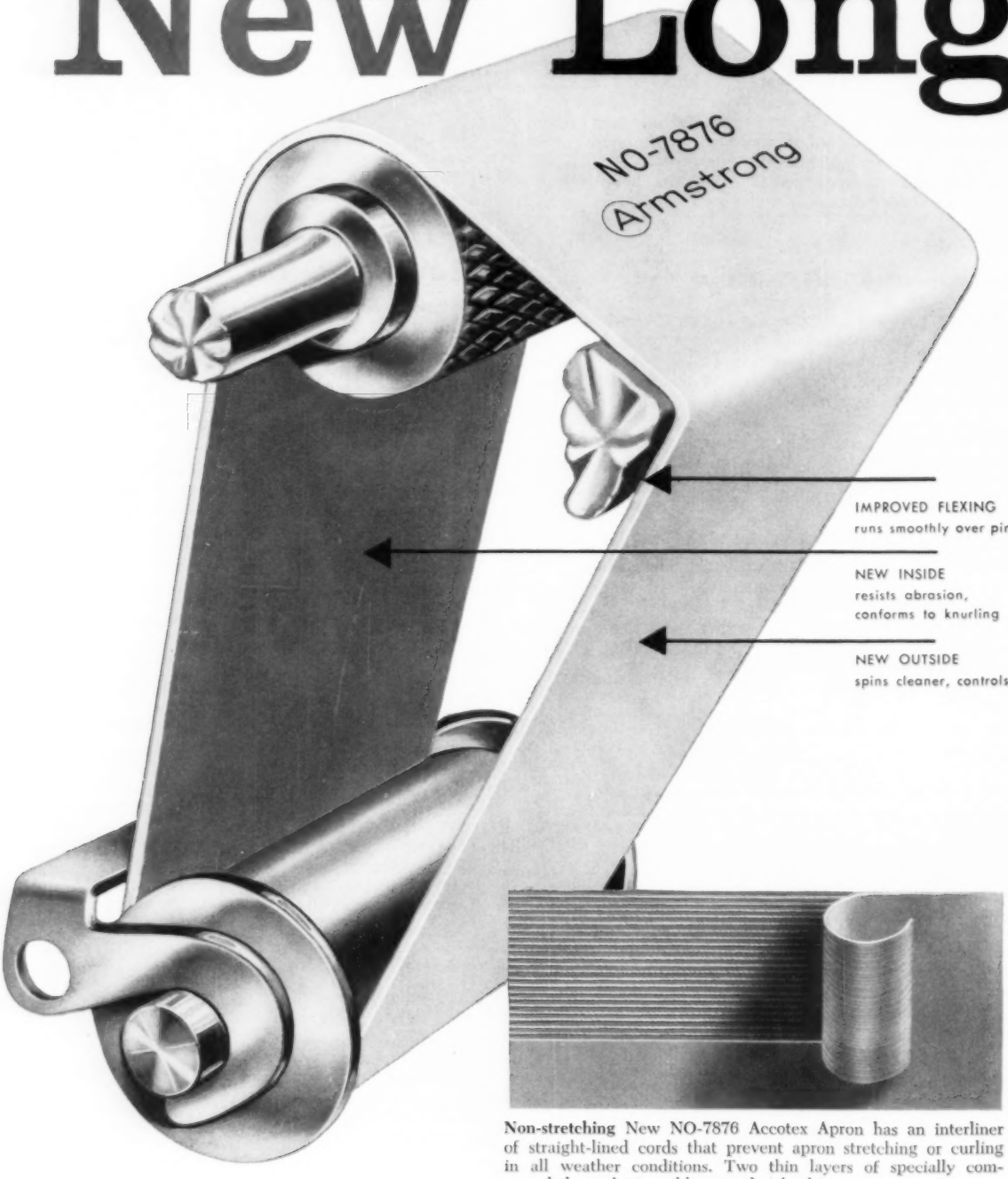
The combined saving in power cost and maintenance cost over the old mechanical brakes is at least $3,000 per year per 100 spinning frames, for an over-all savings of $30 per year per frame."

No mechanical or electrical changes were made at the mill to provide for the installation. A total of 112 frames is braked in groups of four; the other 72 are braked in groups of six.

A general range of yarn numbers is run in the spinning room. Yarn is spun three ways: (1) on loom bobbins, (2) on warp-type packages to be rewound on filling bobbins at automatic winders, and (3) on regular warp packages. Yarn numbers range between 16s and 40s.

Spindle speeds are 9,000 to 10,500 rpm. Spindles vary from 320 to 400 per frame.

New Long-



Non-stretching New NO-7876 Accotex Apron has an interliner of straight-lined cords that prevent apron stretching or curling in all weather conditions. Two thin layers of specially compounded synthetic rubber sandwich this core.

Life Apron

Armstrong development produces bottom aprons that bring new economy to long-apron systems

You'll be able to measure the life of your bottom aprons in years, not in months, when you equip your long-apron frames with the new Accotex NO-7876 Apron. This new thin-wall spinning apron has been running in test mills for nearly two years—and in every case, it's still in excellent operating condition.

The NO-7876 uses the same two-compound principle that has been so successful on double-apron systems. To meet the different conditions on long-apron systems, however, two entirely new rubber compounds had to be formulated for the NO-7876.

The rubber on the outer surface has greatly improved resistance to ozone and flex cracking. And it has the right fiber handling characteristics to insure good yarn control.

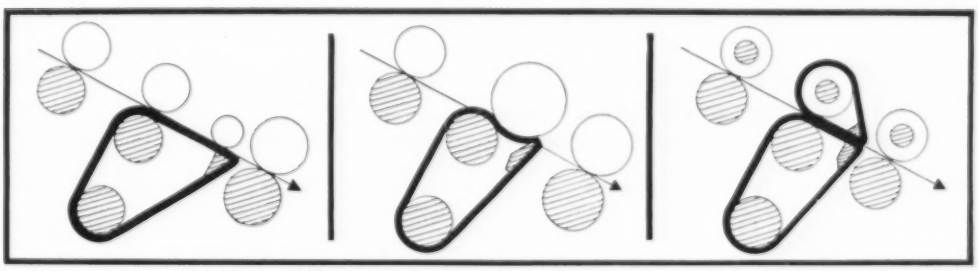
The inner surface is made of an abrasion-resistant rubber that has unusual conformability to the drive roll knurling. This assures accurate tracking and full power transmission. This inner surface also has a low coefficient of friction, allowing the apron to run smoothly over the nosebar without tucking or jamming.

These new rubber compounds help to give the NO-7876 long life. But there's more to good apron performance, of course, than long life. The NO-7876 incorporates all the time-tested features that have been built into millions of Accotex Aprons which are now helping mills turn out quality yarn.

One of the most important features is the patented seamless construction that uses a strong cord interliner to prevent stretching and curling. This construction also helps to give the super-flexibility required for good performance on long bottom apron systems.

In addition, the rubber compounds in the NO-7876 Aprons have built-in electrolytes that help to reduce the build-up of fibers on the apron surfaces.

Ask your Armstrong man for more information on the new NO-7876 Accotex Apron. He'll help you set up a test in your mill. Or write to Armstrong Cork Company, Industrial Division, 6410 Dauphin Street, Lancaster, Penna.



The Accotex NO-7876 is designed for use on spinning systems such as these.

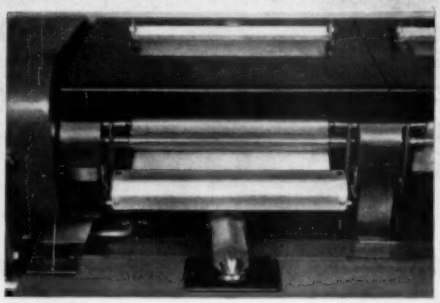
Armstrong ACCOTEX APRONS

. . . used wherever performance counts

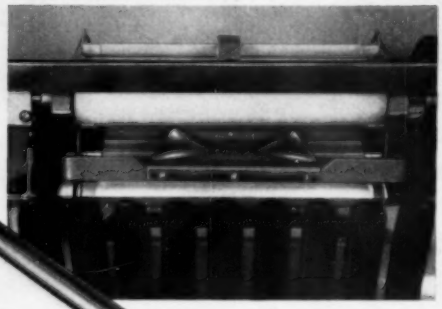
NOW — pick clearers only at the doff!!

NEW SACO-LOWELL SELF CLEANING UNDERCLEARER

Reduces picking to a minimum



New Automatic Self-Cleaning Underclearer open to show clearer surface. Note the neat, compact design.



Self-Cleaning Undercleaner demounted from the frame. The loose-fitting felt cloth is in constant contact with the surface of the bottom rolls. The oscillating stripping comb (arrow) collects the waste in a loose mass, which is easily removed by operator as full cans are doffed.

As an extra aid in reducing sliver variation, a new sliver pan is attached in such a manner that the distance from the nip of the back rolls to the pan remains the same, regardless of changes in roll setting.

Wth mills everywhere facing increased cleaning and picking costs due to the sub-standard 1957 cotton crops, Saco Lowell Research has developed this new self cleaning underclearer assembly which can be applied to both 16" and 18" conventional Saco Lowell Drawing Frames. This time and labor saving changeover cuts opeating costs and improves sliver quality. In addition to eliminating picking except at the doff it offers these 4 advantages:

1. ***Continuous apron keeps roll surfaces clean and lint free.***
2. ***Keeps sliver free of slubs.***
3. ***Apron surface is kept clean by oscillating stripping comb.***
4. ***New sliver pan reduces sliver variation.***

Enjoy substantial savings in your drawing operation with this NEW SACO LOWELL CHANGEOVER. Call or write the nearest Saco-Lowell Sales Office for complete information.

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Consider These Points When You Need a Second Hand

- As the first-line supervisor, a second hand is an important link between mill management and production workers; so the proper selection and training of new second hands can affect a mill's success.
- Here are things to look for when you choose a man for the job.

By WILMER C. WESTBROOK

When a mill needs a new second hand, it has three commonly used methods of selecting a man for the job: it can upgrade an employee, hire an experienced outsider, or train an inexperienced applicant with a technical background.

Of the three possibilities, probably the best is to upgrade a deserving employee if one is available. He is already familiar with the job, knows the company rules and policies, and is acquainted with the employees with whom he must work.

If an employee is carefully selected for promotion, management will know in advance something of the personal loyalties, abilities, and limitations of its new second hand. The time and cost necessary for induction and breaking in will be less than for other methods of selection.

Also the upgrading of employees to supervisory status is a powerful incentive to all employees. Those who themselves have no aspirations for promotion are encouraged by the success of their fellow workers. More desirable young people are attracted to employment in a mill where there are opportunities to grow within the organization. Many employees will cooperate better with a second hand that they consider as one of them.

The Drawbacks to Promotion From Within

But there are also drawbacks to promoting from within. Length of service, personality, and ability on the present job cannot be taken as proof that the applicant has supervisory ability. Acquiring authority does strange things to some people. Some regard it as placing them on a higher plane, far removed from the people they direct, while others develop stronger and better characters through the responsibility of exercising authority over others.

Sometimes a newly made second hand will use his authority to avenge old imaginary wrongs or will throw his weight around in other ways that are detrimental to good employer-employee relations. A second hand promoted from within the organization will usually be more resistant to change and will come up with fewer new ideas than an outsider with a fresh viewpoint. This attitude is due to his familiarity with the old methods, and he really sees no need of a change.

Even though a new second hand may be level-headed and considerate in all his dealings, there will be some employees who will not cooperate with him. Some will be angry because they didn't get the job, and others will resent taking orders from one they had always considered as just another fellow worker.

A number of things need to be considered in choosing an employee to be promoted to second hand. He will be taking a big step forward and should be mentally and emotionally equipped to make the necessary adjustments. Both employees and management should be prepared to work with the new second hand.

If time permits and suitable employees are not available, new second hands can be developed by taking high school or college graduates and giving them a course of training. This is a slow process because the trainee should gain practical experience in all phases of the work he is to supervise as well as a working knowledge of all related processes.

A college graduate who has majored in textile subjects needs a minimum of two years of mill experience to fit him for a supervisory job. Such second hands are usually energetic, ambitious, and anxious to find new and better ways of getting the job done.

If his mill training is thorough and complete, the second hand with a background of technical training works well with his subordinates, associates, and superiors. He is adaptable to changes, situations, and emergencies.

He Needs Room To Advance

He sounds like a perfect choice, but the second hand with higher education also has his faults and limitations. First, there is the need of foreseeing the need of a second hand far enough in advance to have him ready to fill the vacancy. Second, there is the high cost of training.

Third, there are few high-school graduates and no college men who will be satisfied to stay on a second hand's job. If there is no room for them to move up in the organ-

CONTINUED ON PAGE 142

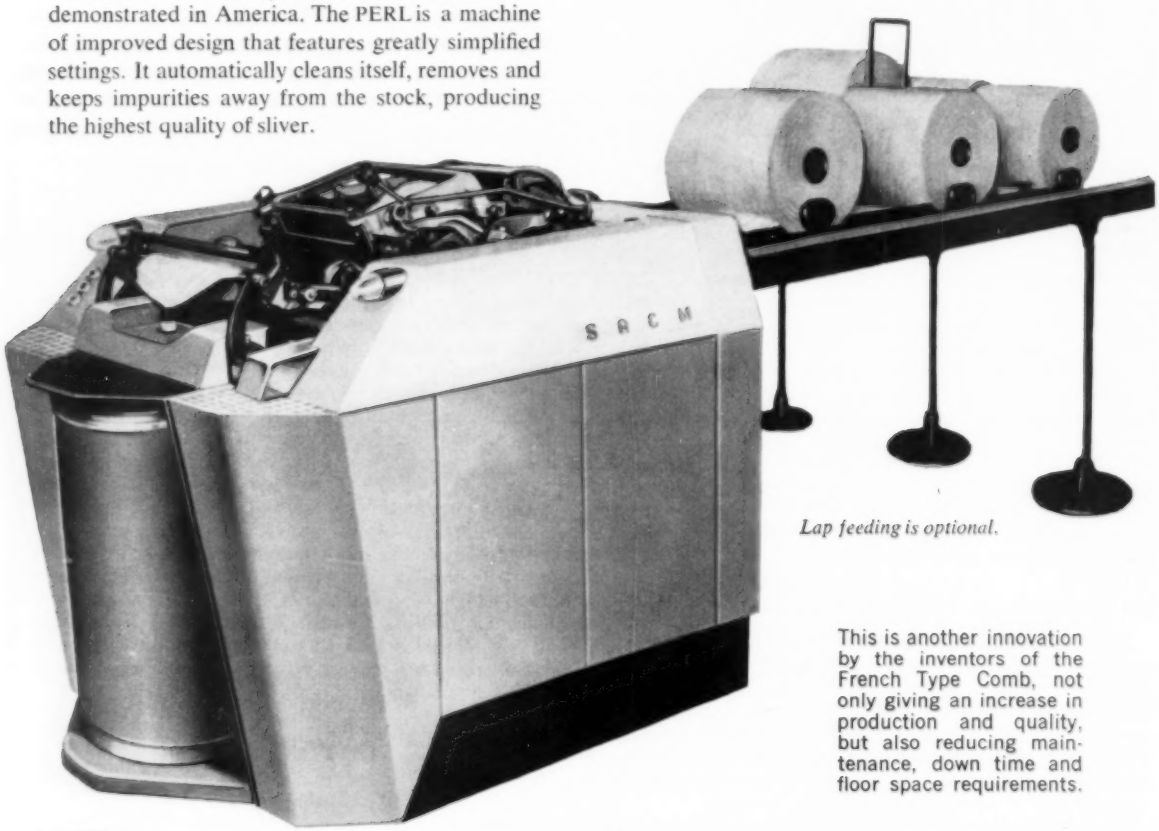
SACM ANNOUNCES THE NEW

PERL WORSTED SYNTHETIC COMB

50% MORE PRODUCTION

175 NIPS PER MINUTE

A dramatically faster, minimum floor space, vibrationless worsted and synthetic comb will soon be demonstrated in America. The PERL is a machine of improved design that features greatly simplified settings. It automatically cleans itself, removes and keeps impurities away from the stock, producing the highest quality of sliver.



Lap feeding is optional.

This is another innovation by the inventors of the French Type Comb, not only giving an increase in production and quality, but also reducing maintenance, down time and floor space requirements.

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Weavers Through The Ages

China...13th Century

In the Thirteenth Century, Marco Polo, celebrated Italian adventurer, brought back to Venice lovely fabrics of cotton grown and woven in China.

Marco Polo, world-traveller, historian and artist, was an observant businessman as well. On his famous travels through the realms of the Khan, he noted such woven luxuries as beautiful muslin and colored chintzes. He brought back to Venice such fabulous stories of richness that the prosperous Venetians did not even believe his stories—until he showed the proof.

Today, stories of richness and exquisite fabrics are commonplace. A story of a new fabric that surpasses those of yesterday not only is believed but eagerly awaited. And with modern research constantly at work to discover the almost magic-like possibilities of textiles of the future, those who wait will not be disappointed.

At Staley's, we are not waiting. For, you, our customers, depend on quality starches, gums and dextrins to help fulfill the promise of tomorrow. From research to product development, to sales and technical service, the men from Staley's are working now to meet your future requirements as well as your needs of today. You may be sure, as always, that more profitable answers to your sizing, printing and finishing problems will be found with quality products from Staley's. May we demonstrate this fact to you?

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Using Salt Efficiently

by INTERNATIONAL SALT COMPANY, INC.

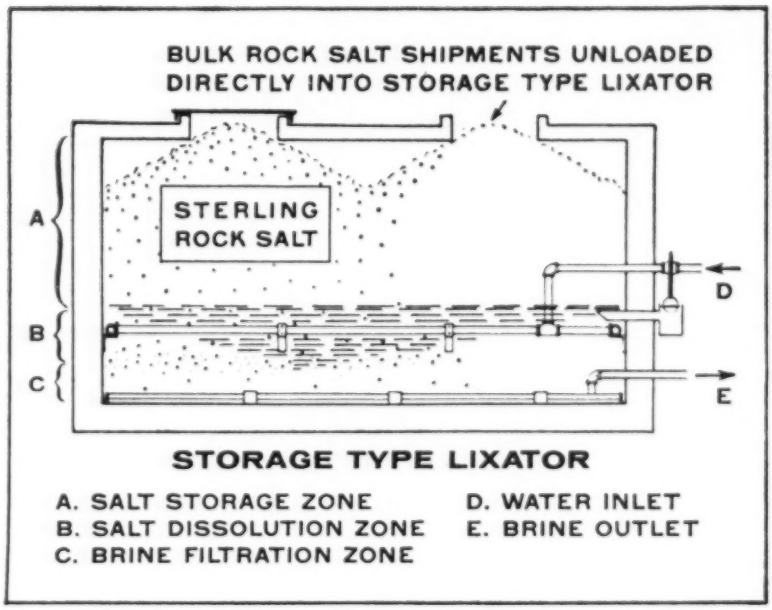
Producing Crystal-Clear Brine at Lowest Cost—by Self-Filtration

Today, more and more companies are using a foolproof brine-making process that produces crystal-clear brine from rock salt, *without using supplemental filter beds or other filtering devices.* This process takes place in the "Sterling Lixator," a rock-salt dissolver developed exclusively by International Salt Company. Operating on International's principle of self-filtration, the Lixator produces a rock-salt brine so high in purity and so brilliantly clean and clear that it can be used in many operations formerly thought to require highly refined evaporated salt.

Here, briefly, is how self-filtration works in the Sterling Lixator: A Lixator is filled with Sterling Rock Salt. Water, admitted near the top, dissolves salt as it flows downward. While flowing down, the brine made in this way becomes fully saturated, and can dissolve no more salt. Still flowing down, this brine is *completely filtered* by the salt-crystal bed in the bottom portion of the Lixator. Thus, the Lixate Brine drawn off through a discharge pipe at the bottom of the Lixator is clean, pure, crystal-clear—and the only source of power used is gravity, which costs nothing!

Other Lixator advantages. In addition to this superbly clean, fully saturated Lixate Brine, a number of other advantages are yours, when you use a Lixator:

- The Lixator permits salt storage and brine making at one location most convenient to the point of salt entry. *Pipes* deliver brine to points of use.
- Because Lixate Brine is piped to points of use, the work of moving dry salt from storage piles to other plant locations is eliminated. This can produce substantial savings in labor.
- The Lixator *automatically* controls salt feed, water feed, and brine discharge. Rapid, uniform brine production is maintained constantly, because in the Lixator there is no bridging, caking, or channeling.



The Storage Lixator — designed for larger operations. This is a combination salt storage tank and dissolving tank. On delivery, rock salt is unloaded directly into the Storage Lixator. The rest is automatic.

Many types of Lixators are available from International Salt Company. In addition to Storage Lixators, there are Silo Lixators and Sterling Model Lixators—in numerous designs to suit any plant layout. And every Lixator operates on the economical self-filtration principle.

For expert advice on the particular Lixator type that will do the best job for you, phone or write the nearest district sales office, or write to us direct. One of our sales engineers will gladly show you how this remarkable brine-making equipment can help you use salt most efficiently and economically.

Using salt efficiently in its many industrial applications calls for technical knowledge and experience. International Salt Company has both. Plus a continuing program of research and development in salt. These things can be put to work for you, in your plant, to help you get the most out of the salt or brine you use.

• • •

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Service and research are the extras in **STERLING SALT**

PRODUCT OF INTERNATIONAL SALT COMPANY, INC.

More-Stable Resin Finishes—

Cyanoethylation improves the stability of resin finishes applied to cotton fabrics. In a report to the American Chemical Society last month, Dr. Jack Compton of the Institute of Textile Technology told members that cyanoethylation after resin treatment raised resin retention after 15 launderings from 54 to 81% in the case of urea-formaldehyde resins. Melamine and modified urea resins applied to fabrics were retained in the range of 77 to 95% if the goods were cyanoethylated to various degrees.

Other improvements include less chlorine retention, higher tensile strength, and resistance to microbial damage. Crease resistance was also retained to a higher degree, as expected.

Souring pH Is Critical for Resins—

Workers at Southern Regional Research Laboratories have found that the resins that are commonly used in wash-and-wear finishes for cottons are quite resistant to most commercial-laundry methods.

In tests that included up to 12 commercial-laundering cycles, the critical factor appeared to be the pH and temperature of the souring step. When souring is done at pH 5.0 and 104° F., resin losses are small, but at pH 3.6 after 20 cycles, 80% of the resin will be hydrolyzed. A sour bath set at pH 3.6 and heated to 187° F. will remove 89% of the resin within 30 mins.

These results point up the considerable responsibility that must be assumed by commercial laundries to adopt safe laundering methods for resin-finished goods.

Solvent-Peroxide Preparation System—

Rapid and continuous de-oiling and desizing of rayon fabrics are accomplished in a method developed by Imperial Chemical Industries Ltd.

The goods are passed through a bath containing trichlorethylene or perchlorethylene, followed by a boiling water rinse to flash off the solvent. Then the goods are impregnated in a peroxide solution at pH 11 and steamed to promote desizing.

The solvent-treating and water-washing sections of the range are enclosed so that solvent can be recovered. Previous work of this type on cotton goods was noted in TEXTILE WORLD, Mar., '58, p. 115.

Diethyl Phthalate Helps Arnel Dyeing—

British Celanese Ltd. has come up with a way to increase the uptake of azoic dyes on triacetate fiber. In dye baths containing both a diazotizable base and the naphthol coupling component, Arnel has always been reluctant to absorb enough of these ingredients, particularly the naphthol, to produce a satisfactory shade in the following acid-nitrite bath.

This problem is solved by adding 4 gpl. of diethyl phthalate to the nearly boiling dyebath at the usual pH of 6 to 8. It is also useful to have an anionic or nonionic dispersing agent in the bath and to diazotize at 45° C. Further details are available in British Patent 793,539.

O_2 To Replace H_2O_2?

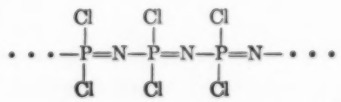
The Italian firm of Montecatini, Milan, has come up with a new approach to bottoming textile fabrics in preparation for dyeing.

The basis of the process is ozone vapor that permeates the material in closed equipment. Treating time is stated to be 20 mins. at relatively low temperatures. The physical properties of fabrics prepared by the new method are claimed to be superior to those bleached with H_2O_2, particularly in respect to absorptivity.

New Flameproofing Compounds—

Organo-phosphorous compounds can be polymerized in cotton fabrics to give a high degree of flame and glow resistance.

The compounds are based on polyphosphochloronitrides $(PNCl_2)_n$ having the formula:



The compounds are based on polyphosphochloronitrides $(PNCl_2)_n$ ammonium chloride. Application is by means of an aqueous solution or dispersion, and the compound is polymerized by heating the treated fabric to 150° C. The polymer is resistant to laundering and drycleaning.

Radiation May Solve Static Problem—

At Geneva last month, Dr. R. Roberts of the Harwell, England, Atomic Energy Research Establishment, told the Atoms Conference members that at least one antistatic chemical can be irradiated so that it forms very durable bonds with polyethylene or polyester fibers. Further studies are under way to see if similar results can be obtained on acrylic and polyamide fibers.

How Copper Amines Affect Wool—

Copper ammonium hydroxide solutions have the ability to shrink wool fibers up to 32% under optimum conditions of time, concentration, and temperature. The reaction is reversible and the treated fibers will return to their normal dimensions if immersed in a 5% sulfuric-acid solution at room temperature.

Prof. C. S. Whewell, speaking before the Fiber Society last month, pointed out that the vigorous reaction between copper amines and wool fiber caused the wool fibers to contract and made them unshrinkable. The maximum absorption capacity of copper by wool is 32 to 34%, and there is an attendant increase of fiber weight that cannot be accounted for solely in terms of copper.

Microscope Checks Fiber Changes—

The electron microscope is proving useful in tracking the progress of changes in the behavior of cotton cellulose as a result of cross-linking, substitution, and polymer impregnation.

Miss Mary L. Robbins, head of microscopy investigations at Southern Utilization Research and Development Div., USDA, described the technique, developed at SURRD, at the Fourth International Conference on Electron Microscopy, Berlin, Germany, last month.

NEW DYES AND CHEMICALS

Fungicides

Fungitrol 25 . . . is a solubilized form of cupferron that has a minimum effect on the color of materials to which it is applied. The product also adds a high degree of water repellency to fabrics while protecting them from mildew and other destructive molds and bacteria.

Fungitrol 50 . . . is a synergistic zinc mixture that can be emulsified for application by water systems or used directly with solvents. The product has practically no effect on the color of the treated materials. It is recommended for a wide range of textile products from cordage to light draperies.

Fungitrol 100 . . . is available in solvent-soluble form and can also be supplied to form stable emulsions or water dispersions. The latter formulation can be exhausted onto fabrics by batch methods. At effective concentrations, there is no odor, color, or hand change in fabrics treated with the product. Recommended for duck, shoe linings, base fabrics to be coated, threads, sail cloth, and flour bags. Nuodex Products Co., Div. of Heyden Newport Chemical Co., Elizabeth, N. J.

Circle D-1 on Reader-Service Card

Azoic Base

Hiltonil Fast Scarlet BC Base . . . produces clear diazo solutions free from tars or other impurities. The base diazotizes rapidly and couples completely to produce uniform bright shades on cellulosic materials. Hilton-Davis Chemical Co., Cincinnati, Ohio.

Circle D-2 on Reader-Service Card

Reactive Dyes

Remazol Colors . . . represent a third class of reactive dyes now available for cellulosic fibers and silk. The line includes **Remazol Yellow G, Red B, Black B, Red 3B, Red Violet R, Brilliant Blue R,** and **Yellow RT.**

The colors have good resistance to chlorine and exhibit high resistance to light fading. The dyes do not contain chlorine but form a condensate between dye and fiber when applied under alkaline conditions.

Applications include printing and pad-steam methods. Fixing time is very short. The colors may be fixed in steam in 30 secs. or fixed by dry heat at 285° F. for 3 to 4 mins. Pad dyeings can be printed with discharge pastes.

The colors do not tend to retain chlorine, and resin finishes so far tested have little or no effect on colorfastness provided an afterwash is given the goods. Hoechst Chemical Co., West Warwick, R. I.

Circle D-3 on Reader-Service Card

Anionic Softener

Melatone O . . . has softening and detergent properties that make it particularly suitable as a finish for bleached or dyed yarn. The softener has excellent resistance to yellowing and does not affect the shade, lightfastness, or washfastness of dyed yarns. Proctor Chemical Co., Salisbury, N. C.

Circle D-4 on Reader-Service Card

Pigment-Padding Colors

Skytone . . . brands a line of pigment-padding colors especially processed for dyeing operations. The colors are offered in a complete selection of brilliant shades that have excellent fastness properties. The pigments are compatible with wash-and-wear finishes and are applicable to all textile fibers. Hilton-Davis Chemical Co., Cincinnati, Ohio.

Circle D-5 on Reader-Service Card

NEW DYES AND CHEMICALS *(Continued)*

Reactive Dye

Rubine B . . . produces pinks, bluish reds, and bordeaux shades of high lightfastness on cellulosic fabrics. On cotton, fastness to washing is also good. Lightfastness on viscose rayon is virtually unaffected by resin finishes. The color is useful in printing, where it is easily fixed by steam or non-steam methods. Other applications include silk dyeing or printing and nylon printing. Arnold, Hoffman & Co., Providence, R. I.

Circle D-6 on Reader-Service Card

Silicone Catalyst

Curite LTC . . . is specifically designed to be used in applications where high curing temperatures are inadvisable. The product performs satisfactorily at a curing temperature of 250° F. and enables the user to apply silicone emulsions to fabrics where high curing temperatures cause dye sublimation or discoloration. Proctor Chemical Co., Salisbury, N. C.

Circle D-7 on Reader-Service Card

Green Naphthol Dye

Naphthol AS-FGGR . . . produces a range of bright to muted green shades when it is coupled with various fast-color salts or bases. The shades have outstanding fastness properties and are dischargeable. Verona Dyestuffs, Springfield Rd., Union, N. J.

Circle D-8 on Reader-Service Card

Azoic Colors

Pharmasol Brilliant Green GL and **Pharmasol Brilliant Green 4GL . . .** have been added to the Pharmasol line for the production of bright green prints. The shades produced have not been previously available in azoic colors. Verona Dyestuffs, Springfield Rd., Union, N. J.

Circle D-9 on Reader-Service Card

Ethoxylated Amines

Ethoquads . . . designates a series of quarternized ethoxylated amines that differ from the usually quarternary ammonium compounds in the type of groups attached to the nitrogen. The products display valuable properties as emulsifiers and as wetting, dispersing, and solubulizing agents. They are also useful as softeners and in antistatic applications. Armour & Co., Chemical Div., 1355 W. 31st St., Chicago 9, Ill.

Circle D-10 on Reader-Service Card

Pigment Red

Aridye Red RF . . . designed to be used in resin-bonded printing systems, the color produced clean, bright, strong application prints that have excellent fastness to light, laundering, and drycleaning. The pigment also resists caustic and so may be used in plissé work. Besides being valuable as a self-color, the pigment is useful as a component in browns and tans. Interchemical Corp., Colors & Chemicals Div., Hawthorne, N. J.

Circle D-11 on Reader-Service Card

Dye Retarder

Retarder A . . . curbs rapid exhaustion of dyestuffs from baths being used to dye Orlon or Acrilan. The product holds the color off the goods during the early stages of dyeing so that level results are possible. As dyeing progresses, the color is released at a uniform rate. Recommended percentages depend on the depth of shade and range from 2 to 3% for light shades to less than 1% for heavy shades. Ciba Co., Inc., Box 25, Village Station, New York 14, N. Y.

Circle D-12 on Reader-Service Card

Cationic Emulsifier

Emkabase CA . . . produces a clear, bright oil when mixed with 10 parts by volume of mineral oil. Water dispersions of the mixture are cationic and exhaust onto many fibers and fabrics. Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.

Circle D-13 on Reader-Service Card

Hydrophobic-Fiber Finish

Hysorb . . . renders man-made-fiber fabrics absorbent to moisture. The effect is a wicking action that aids in the dissipation of moisture almost instantaneously.

The product can be applied by the usual methods to yarns or fabrics and imparts a pleasing hand to the treated materials. The finish is durable to milder-type detergents that are generally used for underwear or other apparel fabrics. The product is marketed under a licensing system to insure quality control and that is without cost to the user. Scholler Bros., Inc., Collins & Westmoreland Sts., Philadelphia 34, Pa.

Circle D-14 on Reader-Service Card

Leveling Agent

Nopco 1425-B . . . is a liquid cationic surfactant that promotes level dyeing with acid, milling, direct, or vat colors. The product helps eliminate barré effect in dyeing nylon tricots and can be used as a partial stripping agent on goods that have been overdyed. Nopco Chemical Co., 60 Park Place, Newark, N. J.

Circle D-15 on Reader-Service Card

Antistatic Lubricant

Nopcone AR . . . is designed to provide lubrication and reduce static in the processing of man-made fibers, particularly fine-denier bulked nylon yarns. The product has a low viscosity, spreads well, and eliminates yarn breakage due to static. The oil is easily scoured out and will not turn yellow or rancid over long periods of storage. Nopco Chemical Co., 60 Park Place, Newark, N. J.

Circle D-16 on Reader-Service Card

Wool-Chlorination Aid

Chloregal D . . . acts as a retarder to the rapid absorption of chlorine by wool in chlorine shrinkproofing processes. The product forms chloramines that in turn break down more slowly to react with the wool.

The auxiliary can be used in any standard application such as hank-processing machines, slubbing machines, package-dyeing machines, or on winches and works equally well on dyed or undyed goods.

The retarder is easily soluble in water and works well at the acid concentration necessary for successful wool chlorination.

Solutions are stable to acid baths up to pH 1 and are resistant to hard water. Geigy Chemical Corp., Ardsley, N. Y.

Circle D-17 on Reader-Service Card

For more data, circle A-35 on Reader Service Card →

Cibacron® Dyes

New "Firsts" for CIBACRON Dyes
prove that versatility as well as unique color brilliance make these first cellulosic fiber reactive dyes first choice for fast, simple printing and dyeing...

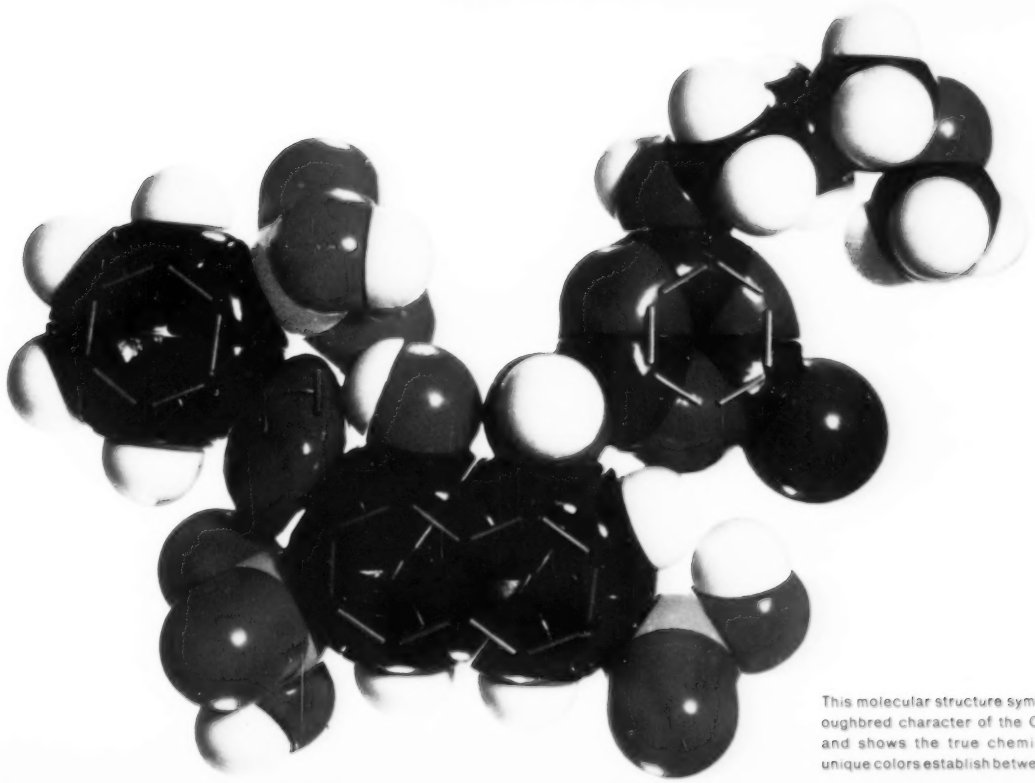
Emulsion Printing* with CIBACRON Dyes
replaces conventional gum system...
delivers higher color yield, less color wash-down...
delivers cleaner, sharper prints...
delivers greater printing speed.

*CIBA, STEIN HALL development on cellulosic fibers using VISCOBOND. (Trade Mark Stein Hall), and Emulsifier SH, (Patented)

Dyeing of Wool with CIBACRON Dyes
by simple procedure delivers the typically brilliant CIBACRON shades with fastness unobtainable using conventional wool dyes.

New CIBACRON Black BG
delivers outstanding fastness to cross-dyeing... now makes possible deep rich shades such as Bordeaux, Bottle Green, Charcoal, rich Browns, Wine and Navy Blue shades.

CIBA



This molecular structure symbolizes the thoroughbred character of the CIBACRON Dyes and shows the true chemical bond these unique colors establish between dye and fiber.

CIBA Company Inc.
627 Greenwich Street, New York 14, N. Y.

Order & Reorder Scoreboard

ON THE UNIFIL® LOOM WINDER

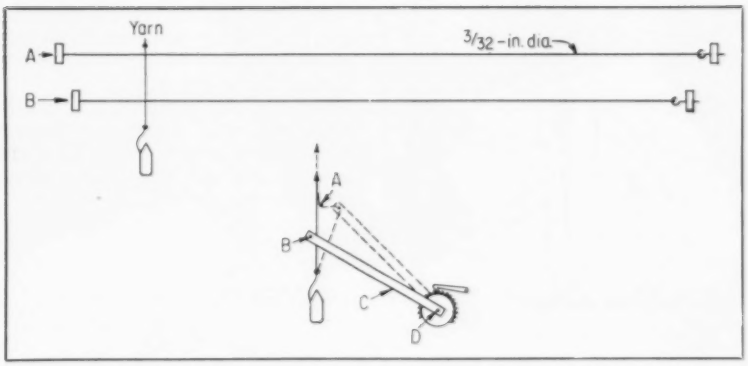
MILL NAME	PLACED INITIAL ORDER	EQUIPMENT INSTALLED 1957	REORDER
Amerotron Corporation	●	●	●
Berkshire-Hathaway, Inc.	●		
Burlington Industries, Inc.	●	●	●
Cannon Mills Company	●	●	●
Cone Mills Corp.	●	●	●
Dover Mill group	●	●	●
Drayton Mills	●		
Judson Mills	●		
Laurens Mills	●		
Marven Looms, Inc.	●	●	●
Pansy Weaving Mills	●	●	●
Ponemah Mills	●	●	●
Richard Textiles	●		●
Riegel Textile Corp.	●	●	
Stanwood Mills, Inc.	●	●	●
Starr Mills Corp.	●	●	●
J. P. Stevens & Co., Inc.	●		
United Merchants and Mfrs.	●	●	●
Waumbec Mills, Inc.	●		
Weldon Mills, Inc.	●		
Woodside Mills	●	●	●
Mill A	●		
Mill B	●	●	
Mill C	●	●	●
Mill D	●		
Mill E	●		
Mill F	●		
Mill G	●		
Mill H	●		
Mill I	●		
Mill J	●		
Mill K	●		

23.8.45

Installing Unifil Loom Winders is *more* than modernization. It's a *revolution* in weaving mill practice . . . promising lower weaving costs, improved fabric quality, greater versatility.

LEESONA®

UNIVERSAL WINDING COMPANY

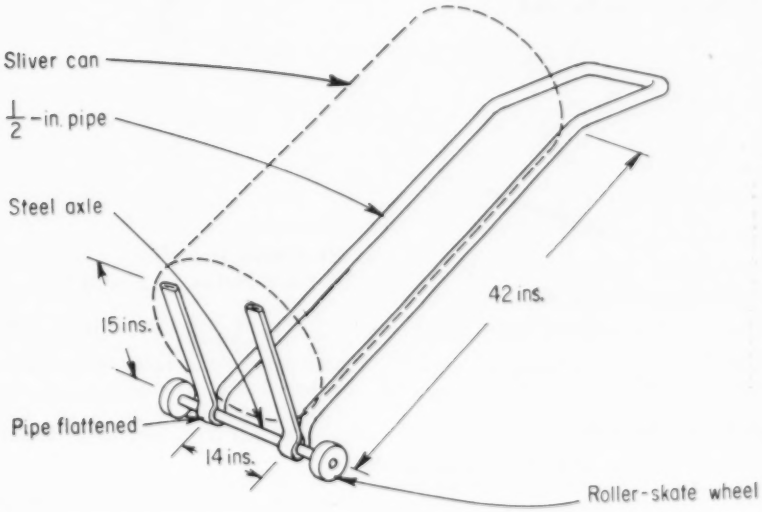


Wires Control Tension on Winder Bobbins

Here's how we prevent differences in tension between individual winding units:

Two $\frac{3}{32}$-in. steel wires are fastened beneath the winding drum. Wire *A* serves as a guide and has a fixed position. Wire *B* is stretched between two levers *C*. Ratchet wheel *D* on each lever raises or lowers wire *B* to vary the tension on the yarn. To increase tension, the wire is raised.

This arrangement has eliminated differences in the hardness of our bobbins. (K-3949)



Truck Moves Big Cans With Little Effort

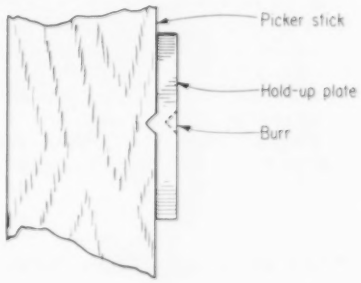
Our operators, especially women, find that the new large sliver cans are hard to move. We have regular trucks for the job that hold several cans, but it frequently is necessary to move or shift individual cans.

We solved the problem by building a light but strong hand truck that can be slipped under the can with little effort. The truck is made as shown from $\frac{1}{2}$-in. pipe, a steel rod, and two wheels from old roller skates. The dimensions are determined by the size can you have to handle. (K-4047)

Clothes Pin Holds Solder While It's Being Welded

When soldering is done on a job out of the shop, a piece of solder sometimes is used until it's too short to hold and no more solder is available. If you use the short solder, you burn your fingers.

You can hold the short piece of solder firmly and safely if you use a spring-type clothes pin. Keep a clothes pin in your tool box, and it's always ready to be used. (K-3503)



Burr in Loom Hold-Up Plate Prevents Slippage on Stick

A broken picker stick or other damage can be caused when a lug hold-up plate slips. To prevent this slippage, make a burr on the inside surface of the plate by striking a center punch against the outside surface.

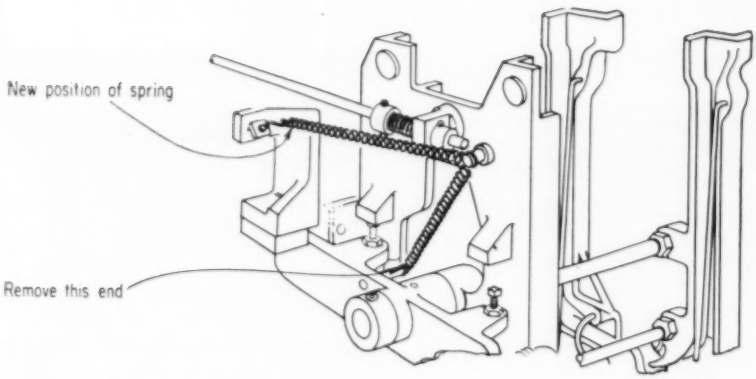
Then tighten the clamp to the picker stick; the burr cuts into the stick and holds securely. The hold-up plate will not slip up or down the stick from loom vibration. (K-3730)

Powder on Quills Protects Fine Yarns

Fine filling yarns can often be prevented from breaking during weaving by treating the empty quills with sweatless powder, chalk, or corn starch.

Place a quantity of the powder in a cardboard container, dump in a batch of empty quills, and shake well. When the filling runs off the quills, the powder keeps the yarn from sticking to the quill surface. (K-3614)

H. E. Wenrich, Berwick, Pa.



Change Loom Spring To Improve Magazine Action

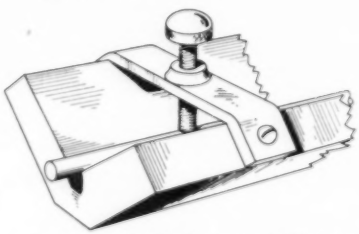
When the second shuttle from the bottom cell of a 2x1 swing-type magazine on an automatic loom is called for a bobbin change, the magazine swings outward to position the back bobbin into transferring position.

After the change, the pull-back spring brings the magazine back to its original place. Sometimes the change misses because the magazine is out of position.

If the pull-back spring is changed to a straight pull instead of a downward pull, it will have better action to pull the magazine back into place.

Make a hook from a dobby top-harness wire and bolt it to the loom's arch end, as shown in the accompanying sketch, to hold the spring for a positive pull. (K-3775)

Wood or Metal Trough Holds Tubing To Be Sawed



It's easy to saw thick wire and thin-wall tubing accurately if you use a wood or metal trough. Make the trough 12 ins. long with a 90° angle.

Bevel the bottom of the trough as shown in the accompanying sketch so that it fits flat on a workbench.

Then make a clamp screw to hold the rod or tubing securely in the trough. The knurled head of the screw can be loosened or tightened quickly to release or fasten the tubing to be cut. (K-3797) *Teuvo Makinen, Tampere, Finland*

Best-Kink Award for August

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for August, according to TEXTILE WORLD reader-judges, was:

"Lifting Tool for Yarn Beams Shifts Them Easily at Looms"

A. D. Forrester, Woodruff, S. C.

Mr. Forrester is being sent a check for $25 with the compliments of TEXTILE WORLD.

Steel Screw in a Wrench Removes Nuts and Studs

When you use an adjustable wrench on the rounded head of a nut or stud, a steel screw placed between the head and your wrench will remove the nut or stud easily. The threads of the screw grip the nut tightly.

You can also remove a steel rod in this same way without a Stillson wrench. Just keep an extra lag screw in your tool kit, and you're always ready for this emergency. (K-3908)

We Make Drill Bits To Bore Holes in Shuttles

When we were using regular-twist drills to bore holes in shuttle walls to insert bristles and nylon loops, many of them broke. The drills would also become clogged with wood and wouldn't cut until they were cleaned out.

We've found that we can make drill bits that are very good for our purpose. We take a wire nail or a prong from an old filling fork, file one end in triangular shape to the size we want the holes to be, and then sharpen the tip to a needle point.

Some of the holes for nylon loops are only 3/64 in. in diameter, but these small holes are quickly bored with the improvised drills. (K-3643) *Ben Francis, Spartanburg, S. C.*

Here you can see why

Nacconol® SL

is the largest-selling liquid textile detergent

Cleanliness, clarity and pale color of NACCONOL SL are dramatically apparent as it flows through glass pipeline systems.

And it keeps its color and clarity without separating . . . even at low temperatures.

Whether you pump NACCONOL SL through pipelines or pour it from the drum, it is always easy to handle, eliminates dissolving, minimizes waste.

NACCONOL SL is a better money-value, too, since it gives you more cleaning power per dollar on an active ingredient basis.

A sample will convince you to join the long list of mills that have made NACCONOL SL the best-seller in the textile industry. Get your test-sample from our nearest office.

NATIONAL ANILINE DIVISION
40 RECTOR STREET, NEW YORK 6, N. Y.
Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence San Francisco

Allied Chemical

For more data, circle A-37 on Reader Service Card

KINKS AND SHORT-CUTS

Mobile Lamp Helps in Machine Fixing

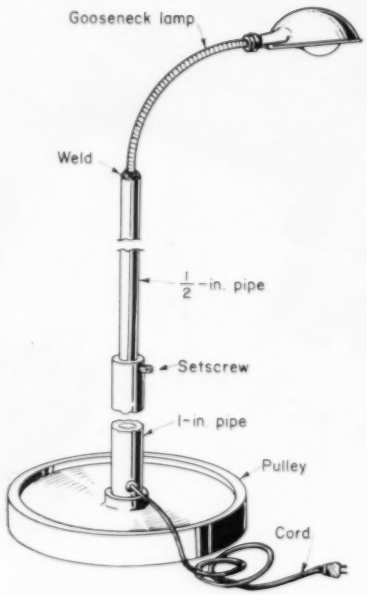
We've made several lamps that have helped our fixers do a better job of working on knitting machines. The lamps can be moved to any machine and adjusted to illuminate any area on the machine. Here's how the lamp is made:

The base of the lamp is a heavy machine pulley. Fit about 2 ft. of 1-in. pipe to the pulley, and lock the pipe in position.

Drill a hole near the top of the pipe to hold a setscrew. Slide a smaller pipe into the 1-in. pipe so that it can be locked by the setscrew.

Weld the flexible end of a gooseneck lamp on the end of the smaller pipe and thread the wire from the gooseneck through the two pipes. Drill a hole in the 1-in. pipe just above the pulley and thread the wire through this hole.

Attach a plug to the end of the wire, and you have a lamp that can be plugged in the stop-motion socket on the knitting machine. (K-3713) *A. W. Oras, St. Jerome, Que.*



Brass Rings Correct Sliver Tension at Draw Box

The correct feed of sliver is important, and we have found that small brass rings are very useful for sliver tensioning.

At the Autoleveller draw box, we feed a single end that weighs about 478 grains per yard. The sliver is put through brass rings that are about 2½ ins. in diameter and ½ in. thick. The rings find their natural position according to the required tension.

Sometimes the ring is almost level with the top of the can. When little or no tension is required, the rings fall to the floor. Even when they are on the floor, the rings still maintain control of the sliver and it does not rub on the floor. (K-3972) *Joe Smith, Bradford, England.*

Change-Order Form Simplifies Yarn Manufacture

In mills where there is twisting as well as spinning, simplification of change-order forms can be very helpful. In our mill, change orders for filling spinning, warp spinning, warp twisting, and filling twisting are written by the technical department, where all carding and spinning changes are controlled.

Until a uniform change-order form was devised, there were separate forms for each of the four processes; so a supply of each form had to be kept at all times.

When we were developing our uniform change-order form, it was a relatively simple matter to pick up from each separate order form all of the information essential to each. The simplified form is 5½x8½ ins., the smallest size that can be handled and filed satisfactorily. Large lettering is helpful.

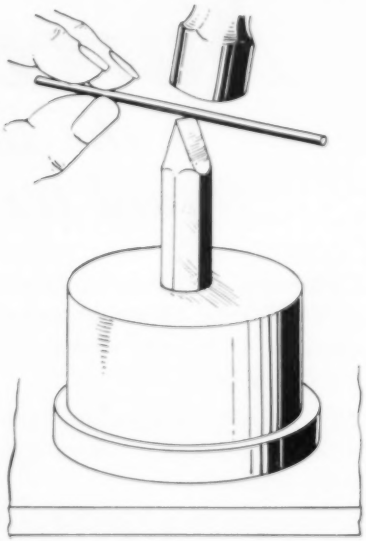
Besides spaces for the usual information, such as yarn number, pulley size, front-roll speed, twist, gears, etc., there is also a place on the form for recording the weight after changing and a space for requesting a specific changing time. Special instructions go under "Remarks." The changer and supervisor initial the form when the job is completed satisfactorily.

Use of this form has been very successful in our mill. (K-3973)

Change Order

Filling spinning ☐ Warp spinning ☐
Filling twisting ☐ Warp twisting ☐
Date _____ Shift _____

Change frame No. _____ Frame group _____
From _____ To _____
Style _____ T.M. _____ Twist const. _____
Twist gear _____ Cyl. gear _____ Jack gear _____
Hank roving _____ Yarn mark _____
Draft const. _____ Draft gear _____
Lay gear _____ Trav. No. _____
Pulley size _____ Fr. roll rpm. _____
Yds./bobbin _____ Wgt. after change _____
Please change _____
Remarks: _____
Changed by _____
Approved by _____



Cut Round Stock Safely and Easily

Small steel rods or bolts can be cut to length more easily if the chisel is mounted in a firm support as shown. An old casting or section of a shaft is bored to a drive fit for the chisel, and the stock is placed on it for cutting with a heavy hammer. (K-3925)

WHATEVER YOUR NEED, THINK FIRST OF

NAUGATUCK

FOR LATEX

NATURAL OR SYNTHETIC RUBBER LATICES

PLASTIC RESIN LATICES

READY-TO-USE COMPOUNDS

for your every textile application...

Whether you use latex for backsizing, saturating or coating—to increase strength, stability or stiffness—*there's a Naugatuck latex best for you...* either as a raw latex or compounded to meet your particular application.

Do you, for example, need a latex with minimum offshading effect on sensitive dyes? Do you require a latex that is stable to hot starch additives? Or one that can be extended with high filler loadings?

Perhaps your need is for a latex to lock pile, prevent weave slippage, impart dimensional stability, strength and resilience...or to up-grade your product's quality and hand. Whatever your need, *think first of Naugatuck for Latex!*

With more than three decades of formulating experience, featuring continuous research and application assistance, Naugatuck is one of the most experienced and exacting suppliers of latex and ready-to-use latex compounds to the textile industry. You can be sure of the care, skill and know-how that provides quality and uniformity in every Naugatuck latex. They are all available to you through any of the District Offices listed below.

US RUBBER

United States Rubber

Naugatuck Chemical Division 1038L Elm Street Naugatuck, Connecticut

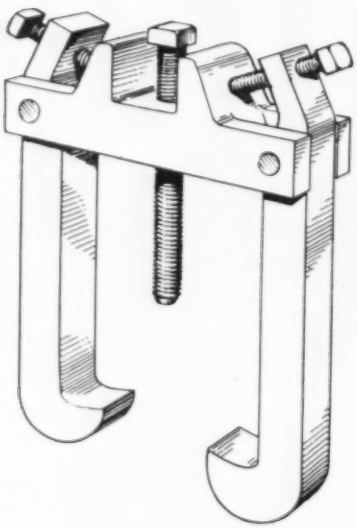
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices

DIST. OFFICES: Akron • Boston • Gastonia • Chicago • Los Angeles • Memphis • New York • Phila. • **CANADA:** Latex Div., Dominion Rubber Co., Ltd., Montreal • **CABLE:** Rubexport, N.Y.

KINKS AND SHORT-CUTS

Rugged, Simple Gear Puller Pulls Gears Without Slipping

One of the common difficulties in pulling gears is that the gear puller slips off the gear when pressure is applied. But the rugged, simple gear puller shown in the accompanying sketch locks itself firmly to the gear to be pulled.



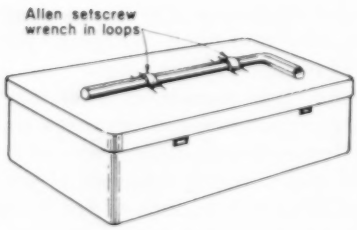
The puller is made from a good grade of steel so that it can be tempered after it is machined. It is made from three pieces of steel, two pieces of round stock for the pins, and three setscrews.

When the tool is used, all three setscrews are backed out so that the points are flush with the tool surface. Then the tool is placed on the gear. The two side setscrews in the yoke are tightened to hold the puller firmly against the gear. The center setscrew is turned clockwise to remove the gear.

In addition to gears, the tool also pulls pulleys, handwheels, and other wheels. You'll need two sizes: one for small gears and one for large gears. (K-3966) *Charles H. Willey, Penacook, N. H.*

Small Tin Tobacco Box Stores Allen Setscrews

Finding the correct-size hollow-head setscrew from a supply of other small loose screws and bolts in a tool box or tool kit is a hard job; you never seem to find the right setscrew.



But a pocket-size empty tin tobacco box makes a good storage space for hollow-head setscrews. Cut four slits in the lid of the box as shown in the accompanying sketch. Then raise the two narrow sections of box lid between the slits to form a holder for the setscrew wrench you use most.

Put all your small Allen setscrew wrenches into the box, and then add a couple of setscrews for each-size wrench. You can pick the setscrew you need out of your tool kit quickly because the wrench on top identifies it. (K-3529) *Charles H. Willey, Penacook, N. H.*

Weld Two Wrenches Together To Increase Efficiency

When two sizes of Allen wrenches are used constantly, weld them together as shown. Then both sizes are instantly available when they are needed; and by joining them together, additional leverage is obtained. (K-3288) *Charles H. Willey, Penacook, N. H.*

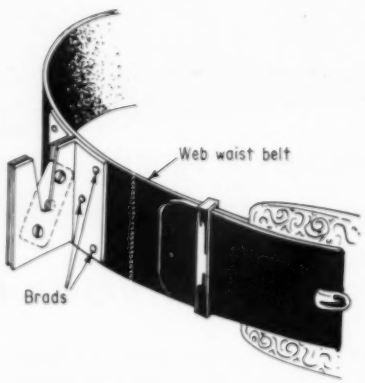
Tubing and Screwdriver Fasten Screw Eyes Overhead

When you're hanging lamp fixtures or doing other overhead jobs where screw eyes are used, you sometimes get into tight places where you cannot turn the eye screws with a screwdriver inserted through the eye.

A tool made from a screwdriver and a short piece of copper tubing does the job quickly and without strain to you.

Just drive the tubing on the screwdriver to a tight fit. Then flatten the open end of the tubing so that it fits your screw eyes. With this tool, you can turn screw eyes just as you turn ordinary screws with a screwdriver.

You can keep the tubing on your screwdriver, or you can carry it as an attachment to be used only when you need it. (K-3544)



Razor-Blade Cutter Produces Smoother Knots

Our winder operators used to waste considerable time in getting out and opening pocket knives to cut the tails off strong yarns; and the tails were not always cut off smoothly.

We improved this job greatly by making a special cutting tool that can be attached to a waist belt. The tool consists of a couple of pieces of light metal notched and bent as shown.

A double-edge razor blade is bolted at an angle between the pieces of metal. The only part of the cutting edge exposed is within the slot; so there is no danger of cut fingers.

The yarn is cut by pressing it down into the slot, and both of the operator's hands are free to handle the ends. (K-3941) *H. A. McLean, Yorkshire, England*

For more data, circle A-39 on Reader Service Card→

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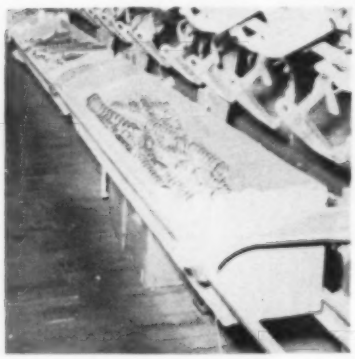
KINKS AND SHORT-CUTS

Tube Trays Increase Winder-Operator Efficiency

In winding dye packages on large-diameter paper tubes, our operators had to walk some distance to the storage bins to get the tubes. Keeping a supply on hand in trucks occupied too much aisle space.



We solved the problem by building trays that fit between the guard rail and the edge of the empty bobbin conveyor. One end is partitioned off to form a bin for the knitted material used on dye springs.

Our trays are made of ¾-in. wooden boards, but lighter trays can be made from plywood or sheet metal. A slot on the back of the trays keeps them from slipping between the rails.

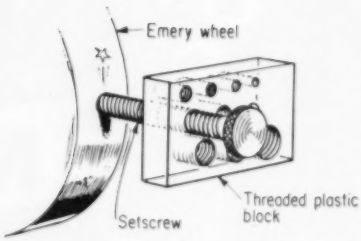
This arrangement has increased production per operator from 5 to 15%, and housekeeping around the winders is much neater. (K-3927) *Kirby A. Wright, Edenton, N. C.*

How To Eliminate Tenter-Clip Marks

We had trouble with tenter-clip marks on naphthol-dyed goods that were finished with a silicone resin. Considerable shade change occurred in the areas where the goods touched the hot clips.

We got around this defect by first tying a rag on the entering end of each tenter chain and letting the rag drag until the clips were thoroughly clean of grease, oil, and dirt.

Then we regulated the speed of the range so that when the goods came off the cans they were nearly dry. We also kept the tenter housing temperature at not over 350° F. By these changes, we got rid of clip marks on this class of finish. (K-3993)



Plastic Block Holds Setscrew While Setscrew Is Cut Off

It's sometimes necessary to cut off part of the end or head of a setscrew, wood screw, Allen setscrew, or bolt. When the material is hardened, it cannot be cut with a hacksaw. And if you hold the setscrew with your fingers to grind it on an emery wheel, you'll burn your fingers.

But you can use a piece of plastic material such as nylon to hold the setscrew because the plastic does not conduct heat. Bore several holes in a plastic block as shown in the accompanying sketch.

Then tap the holes for standard-size setscrews. When you need to cut off a setscrew, screw it into the plastic block and grind the setscrew on an emery wheel. (K-3897) *Andrew Klimkosky, Whitestone, N. Y.*

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- Improve quality
- Reduce work
- Increase production
- Make work easier

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2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1958.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

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QUESTIONS AND ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

How To Calculate Linen-Yarn Diameter

Technical Editor:

We've noticed several recent references to cotton-yarn diameters in TEXTILE WORLD but have not noticed any reference to linen yarns. How do they compare with cotton yarns? (1344)

The diameters of linen yarns are close to the diameters of cotton yarns of a similar weight-per-unit length.

Linen yarns, however, are slightly more dense than cotton yarns. A 2.8 linen-lea yarn, which is equivalent to 1s cotton, would measure 1/29 in. The same-size yarn in cotton would measure 1/28 in.

To figure the number of ends per inch of linen yarn for 100% cover, we recommend you use the formula $29\sqrt{N}$ where N = cotton yarn number. Convert your lea yarn number to the cotton system with the yarn-number conversion table [TEXTILE WORLD, Mid-July, '57, p. 18] or use this formula:

$$\frac{L}{2.8} = N$$

where L = linen lea
N = cotton yarn number

How To Test Dacron-Rayon Blends

Technical Editor:

We are getting complaints from our customers about 55-45 Dacron-rayon blends fading after they have been washed. We have given these goods the standard Fade-Ometer test and washed them in warm water with detergent. Are these the correct tests? (1410)

Your fading problems may be caused by light exposure as well as laundering, but it is probably the latter that is giving the most trouble.

Unless you have specified washfast colors on these fabrics, the rayon component is probably dyed with direct colors, which don't withstand commercial laundering very well.

The gentle laundering tests you describe would not cause loss of color if selected direct dyes were used, but if repeated a number of times they would probably affect the shade. Then you are faced with the hundred and one laundering methods used at home plus the commercial laundries, any or all of which may be more drastic than your tests.

We suggest that in the future you specify to your supplier that the fabric must meet certain standards of fastness; then have the goods checked by an independent laboratory. Also, it might help to supply hang tags that tell the customer how to launder the garment to preserve the shade.

As a guide to what you should expect your garments to stand in service, have some fabric tested by the AATCC Wash-Test Methods IIA and IIIA. Test IIA specifies washing for 45 mins. at 120° F. with 0.2% soap and 0.2% sodium metasilicate. The test is made in a pint jar to which 50 steel balls are added along with the sample. The jar is rotated in a Launder-Ometer to provide agitation. Test IIIA is similar but is run at 160° F. for 45 mins. with 100 steel balls in one-third the water used in Test IIA.

The results of these tests will give you a standard of comparison that will guide you in future purchases. Furthermore, if the fabrics stand up to Test IIIA, you should have few complaints.

Dye Enough Stock for Difficult Wool Blends

Technical Editor:

We run blends of several different colors to produce yarns of difficult shades such as khaki. We get variations of the shade, however, from batch to batch. What can we do? (1400)

Where several colors are used in a blend to produce yarns of difficult shades such as khaki, the percentages are determined by the shade in the original batch.

Don't dye more than one color in the following batch at once. When you dye wool to a certain shade, you should plan to dye enough wool so that you will not have to dye that shade again for as many of the following batches as possible. You may have to dye more than one lot and put it through a picker for a large lot of one uniform shade.

When a new batch is laid down, you are assured that the shade change from the previous batch will be much less than the actual change in the new color you had taken pains to match. Providing the previous shade is matched with the standard shade, you should have little or no change in shade.

Fabric Edge Curling Can Now Be Controlled

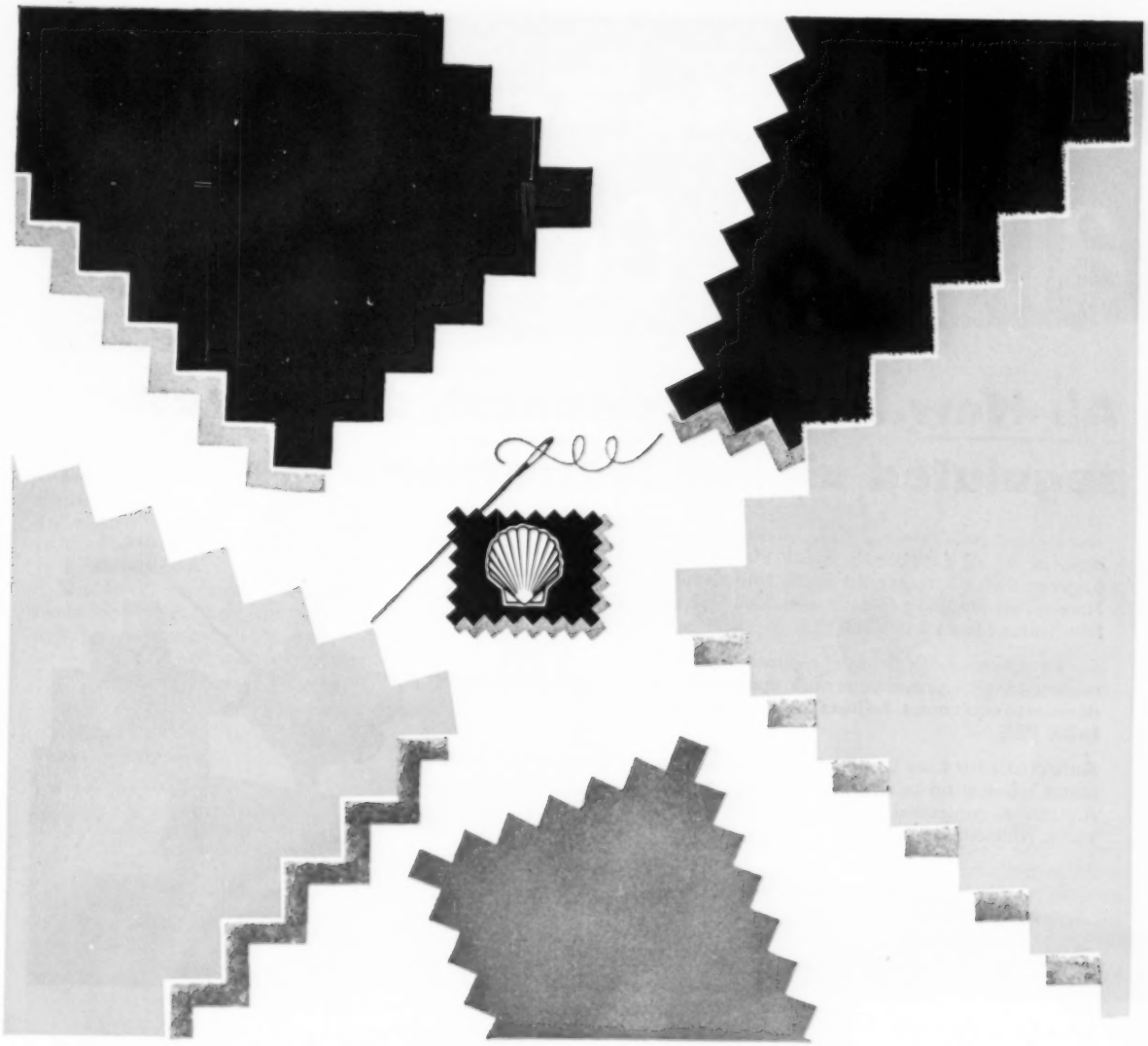
Technical Editor:

What are the latest developments to stop the edges of knitted fabrics from curling during finishing operations? (1401)

A stiffening agent, which is a liquid with a polyamide base, has recently been developed in Germany to control the edges of tricot fabrics. Experiments are under way to determine the effectiveness of the new agent on circular-knit fabrics.

The liquid is diluted to the desired degree with a solvent. In its liquid state, the agent does not mix with water. When dry, the agent cannot be dissolved in water and is resistant to most chemicals and detergents used in dyeing and finishing.

The agent is applied before finishing and does not damage the fabric. When dry, the fabric is not brittle and it retains its original elasticity.



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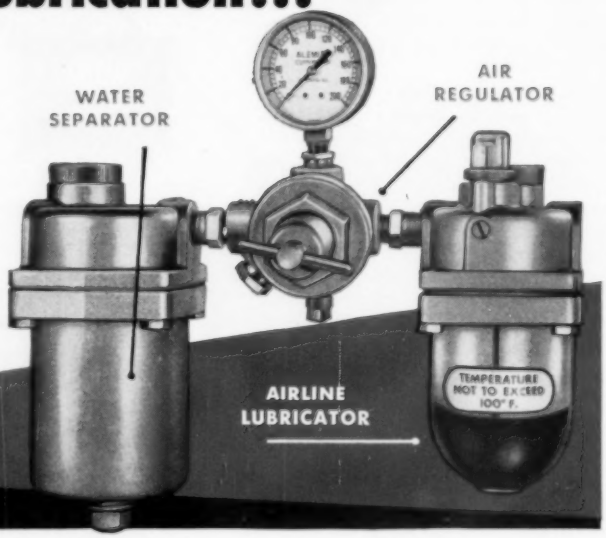

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High-Speed Loom for Fine Yarns

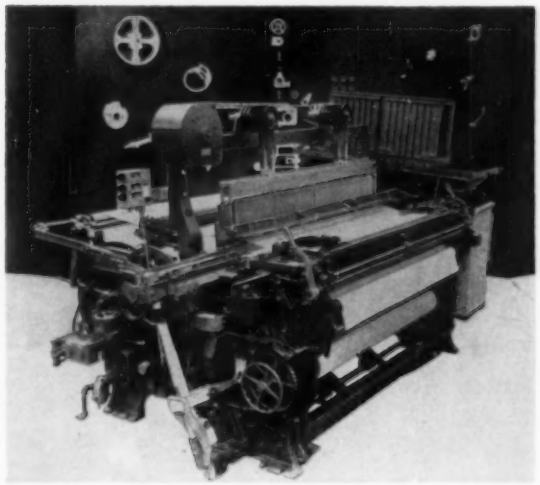
A 50-in. X-2 loom that runs spun-rayon 15s warp and filling, for example, at 185 ppm. has been announced by Draper Corp., Hopedale, Mass.

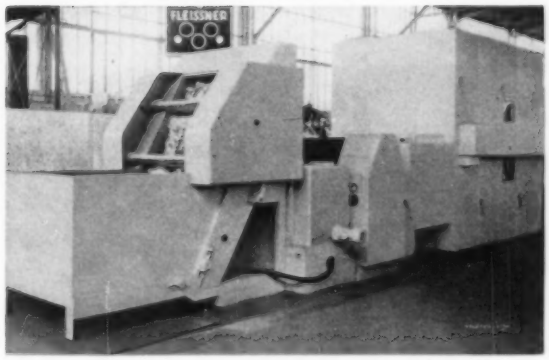
The loom features: (1) Draper's automatic filling magazine with a 20-hr. supply of filling, (2) Tru-Tension let-off that insures a constant rate of yarn delivery, and (3) automatic lubrication of the picking motion, camshaft and crankshaft bearings, and harness cams.

The capacity of each magazine is 96 bobbins of 1¼-in. diameter or 80 bobbins of 1⅞-in. diameter. Advantages are cleaner yarns, fewer cloth seconds in general, and reduced drag-ins and other cloth imperfections caused by filling waste.

The let-off eliminates many cloth defects commonly made by let-offs; wavy cloth on weaves critical for this defect is eliminated. The let-off is particularly effective on fine cottons and man-made fibers.

Circle T-1 on Reader-Service Card





Circle T-2 on Reader-Service Card

Air-Suction Drum Dryer

Raw stock and fibers of all types, plus nonwoven and knitted fabrics, can be dried in the Fleissner dryer offered by Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

The basic unit consists of two metal drums enclosed in steel framing. Fiber or fabric pass over one-half the circumference of one drum and is transferred to the second drum. Hot air is driven through the material to be dried and passes through the drum to be reheated and recirculated.

The dryer is said to be particularly effective for drying knitted fabrics, where good dimensional stability is important. Several two-drum units may be lined up to increase the productive capacity of the machine.

Steam consumption is 1.4 lb. per pound of water removed. The drying capacity of the machine is boosted by electric heating units. The dryer will produce fiber or fabrics with ±2% moisture content without automatic control, or ±1% moisture content with automatic control.

Hosiery Trimming Unit

A hosiery trimming unit for SCP and SCOP machines, developed by Southern Mill Equipment Corp., 508 W. 5th St., Charlotte, N. C., enables knitters to run almost 50% more machines than at present. The unit also saves up to 1 lb. of yarn for every 7 doz. pairs of socks knitted.

The combination yarn binder and clipper, called the Kwick-Trim attachment, fits the machines without radical changes in machine setup. The device fits over the cylinder and cuts the strings of yarn between socks at intervals and eliminates this operation formerly done by the knitter.

Circle T-3 on Reader-Service Card

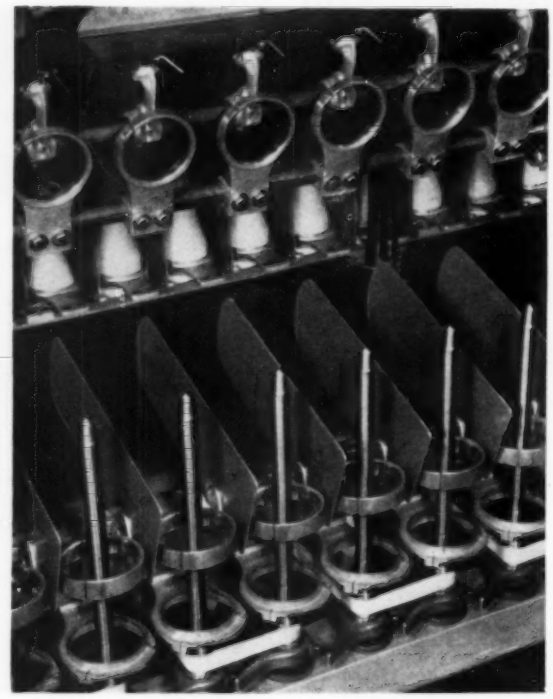
Loose Spring Reed

A loose spring reed designed to improve fabric quality and to last longer has been developed by Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia 32, Pa. Reed marks and dent breakage are eliminated.

In addition to normal springs soldered at the top and bottom of the reed, a second loose spring is placed near each soldered spring.

In effect, these extra springs shorten the length of the dent wires and make them more rigid to insure more-accurate dent spacings. The reeds are available in either pitch-band or all-metal construction.

Circle T-4 on Reader-Service Card



Improved Spinning Frame

An improved Gwaltney spinning frame has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

The over-all height of the frame is 4 ins. lower than previous models for easier creeling and servicing.

Individual ring holders replace the ring rail, and the separators can be tilted. Balloon-control rings have been redesigned for better yarn control.

The frame is equipped with the O1C Speed-Tex ring, which permits extra-high traveler speeds, and the Duo-Roth drafting system.

Either the Tru-Set top arm or the Magnetrol pressure system can be used.

Circle T-5 on Reader-Service Card

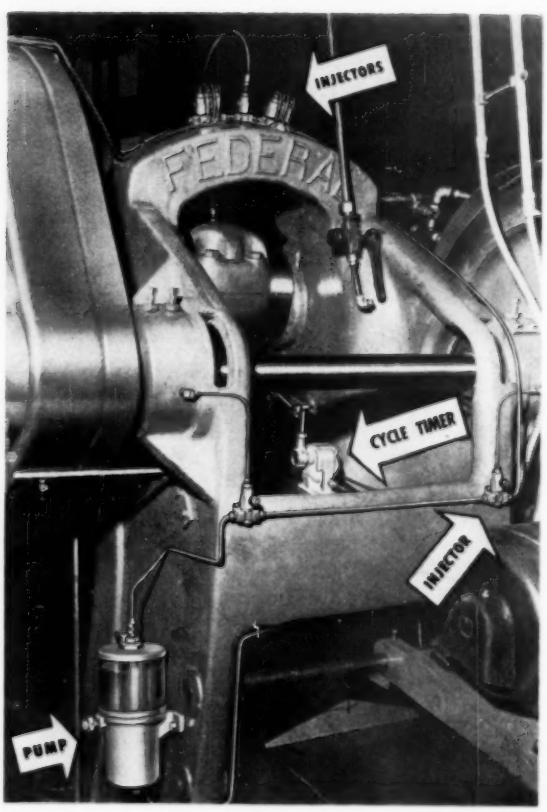
Automatic Lubricating System

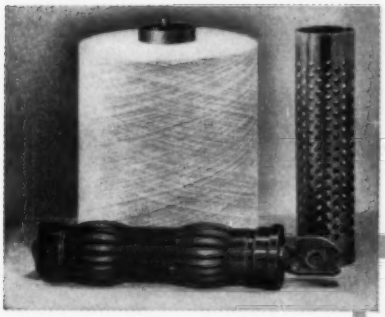
An automatic or semiautomatic system, Ram-Pump, for lubricating bearings on single-machine units while they operate has been announced by Lincoln Engineering Co., 5742 Natural Bridge Ave., St. Louis 20, Mo.

The system is air-operated and is controlled either electrically, mechanically, or manually. Two models are available: (1) for low-pressure application of oil and (2) for high-pressure application of grease or oil.

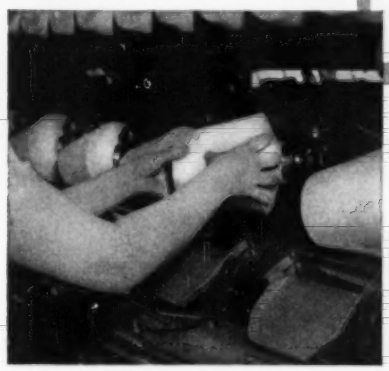
Advantages of the system are: it's simple to install, machine downtime for lubrication is eliminated, maintenance employees are free to do more-productive work, and the number and quantity of lubricants consumed are reduced.

Circle T-6 on Reader-Service Card

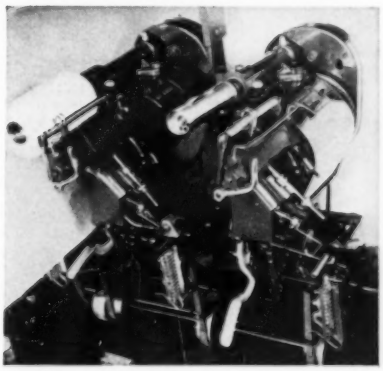




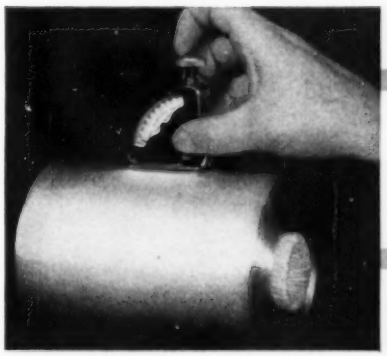
Ball bearing balloon tube holder for 1⅝" dye tubes on Model 102.



Doffing package on Model 102. Holder swings out. Balloon spring easily releases package.



1⅝" dye tube holder and pressure assembly on Model 75.



Dye package wound on Model 75 is exceptionally soft — 5 Durometer reading.

FOSTER MACHINES

for winding dye packages

Model 102

Model 75

Special Attachments for Maximum Efficiency

The Foster Model 102 has, for years, been a favorite machine for winding cotton yarn dye packages, as has the Foster Model 75 for winding rayon and acetate dye packages. Basically suitable for these purposes, both machines have been made even more efficient by the addition of special attachments which are described and illustrated herewith.

FOSTER MODEL 102

For winding ⅝" dia. or 1⅝" dia. dye tubes the Model 102 is equipped with balloon type tube holders. Tubes slip over these holders easily and slip off just as easily . . . . thereby eliminating yanking and resultant distortion of the dye packages.

FOSTER MODEL 75

For winding 1⅝" dia. dye tubes the Model 75 is equipped with 1⅝" holders and pressure roll assemblies. The winding is done directly from the supply and requires no special feed rolls. Yarn tension as low as 4 grams and density as low as No. 5 Durometer reading can be obtained. The soft packages facilitate quick and uniform penetration of the dye liquor.

For more detailed information contact our nearest office.

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

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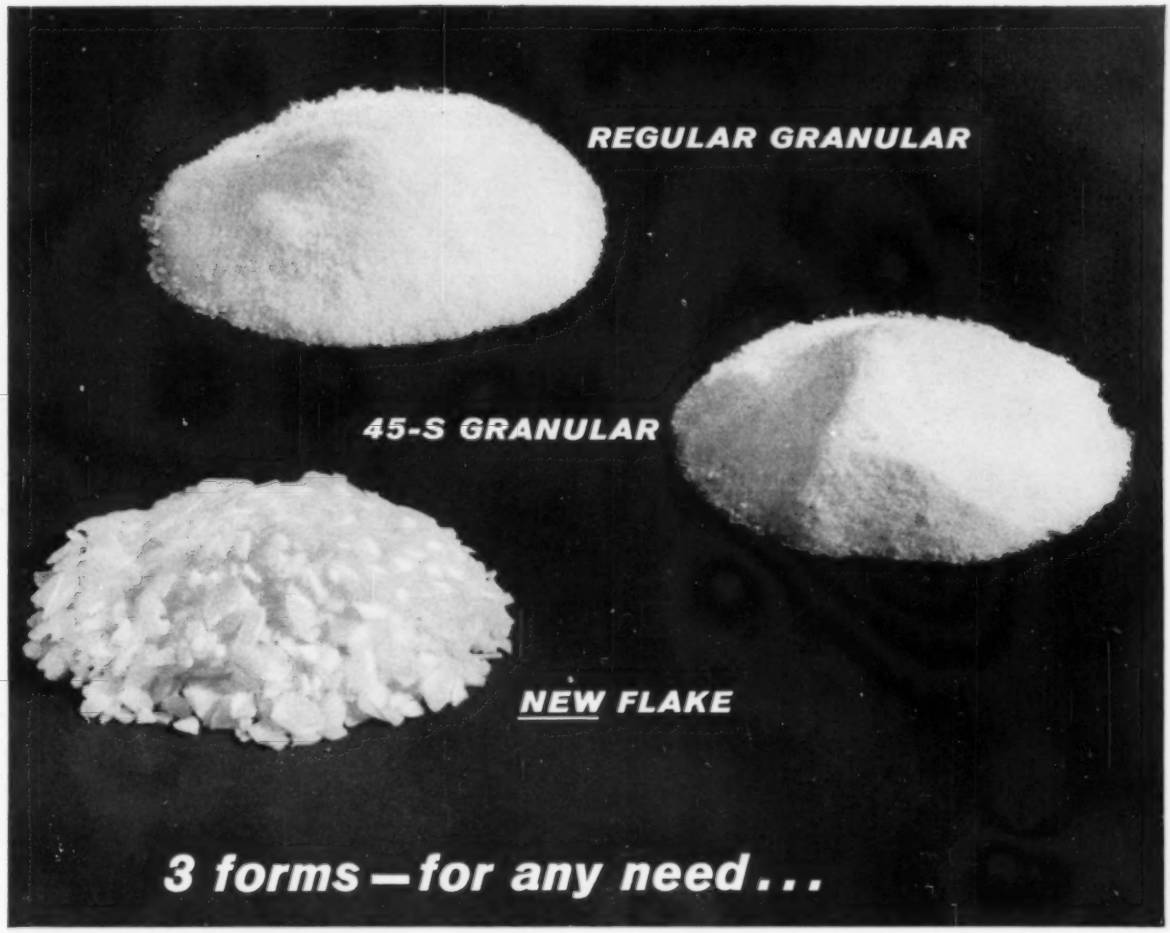
Processors of corn, wheat and blended starches for industry since 1898

For more data, circle A-44 on Reader Service Card



...One Quality—U. S. P. ANHYDROUS
SOLVAY SODIUM NITRITE

SOLVAY now offers a choice of three forms of anhydrous Sodium Nitrite, identical in quality—U.S.P.—but designed to meet different industrial requirements.

1. New Flake Form—This *exclusive* SOLVAY time-and-labor saver—available at no extra cost—meets the need for a free-flowing product that stores without caking, yet dissolves readily.

2. Regular Granular Form—Fast dissolving, crystalline material for a wide range of applications.

3. 45-S Granular Form—Similar to regular granular form, but preferable when greater resistance to caking in storage is desired.

All three forms of SOLVAY Sodium Nitrite are available in 400-lb. and 100-lb. fiber or steel drums and 100-lb. bags.

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Sodium Nitrite • Caustic Soda • Calcium Chloride
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Ammonium Chloride • Ammonium Bicarbonate • Vinyl Chloride • Methylene Chloride • Cleaning Compounds
Hydrogen Peroxide • Aluminum Chloride • Snowflake® Crystals • Monochlorobenzene • Ortho-dichlorobenzene
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SOLVAY branch offices and dealers are located in major centers from coast to coast.

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Please send without obligation sample or samples as follows:

- ☐ SOLVAY *flake* Sodium Nitrite
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- ☐ SOLVAY *45-S granular* Sodium Nitrite
- ☐ Include prices and name of nearest dealer

Name_____
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Company_____
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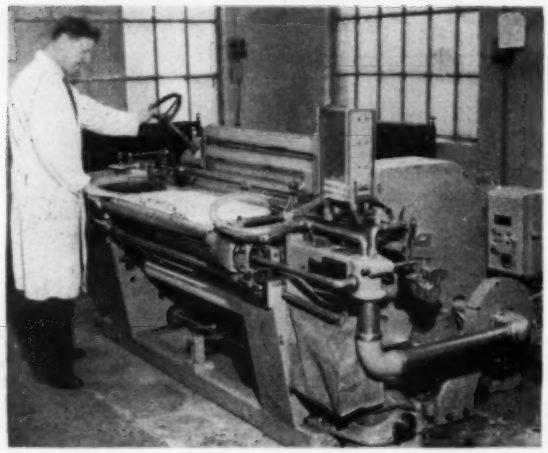
City_____ Zone____ State_____



Multishuttle Loom for Man-Made Fibers

A loom for weaving continuous-filament man-made-fiber yarns has been announced by Shirley Institute and Wilsons & Longbottom Ltd., Barnsley, Yorkshire, England. The two-shuttle bobbin-changing loom is available in widths of 48, 54, 60, and 66 ins. Loom speeds are 182 ppm. for 48- and 54-in. looms and 156 ppm. for 66-in. looms.

In mill tests, the loom has woven light taffeta and plain-weave nylon fabrics, a full range of polyethylene and rayon fabrics, and nylon and glass-fiber industrial cloths. Filling tension on these fabrics is said to be as low as five grams.

To protect yarn and cloth from oil, the lay driving motion is housed in hollow side frames and only a straight crankshaft is exposed. The picking motion runs in an oil bath, and the dobby has centralized lubrication.

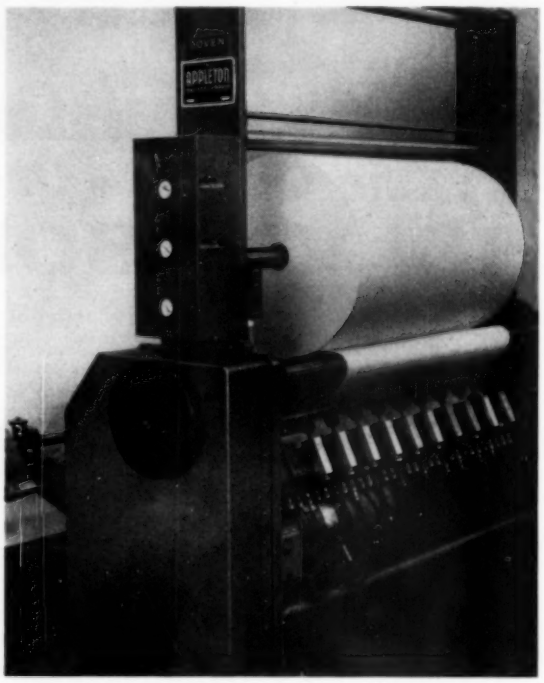
The handwheel is much like the steering wheel of an auto and turns the entire loom or only the dobby. A stop button stops the loom with both shuttles in the left-hand shuttle boxes.

Picker sticks and cloth rollers are the only wooden parts on the loom; there are no lug straps or leathers.

The loom has a center filling stop motion that stops the lay before the beat-up, electric warp stop motion, and air control of the filling at the bobbin transfer and also at the double-box end of the loom. A fan built onto the motor furnishes the suction.

The length of free cloth between the beat-up and the take-up roller can be varied to suit the fabric being woven. The dobby has no pull-down springs.

Circle T-7 on Reader-Service Card



Drum Winder and Slitter

A machine designed to slit textiles and coated fabrics has been introduced by Doven Div., Appleton Machine Co., Appleton, Wis.

The cutters are air-operated and may be quickly reassembled after sharpening to 0.001-in. tolerance by inexperienced employees. Parent roll capacity is 48 ins.; optional equipment increases this capacity to 60 ins. Web sizes are from 36 to 125 ins. wide.

Circle T-8 on Reader-Service Card

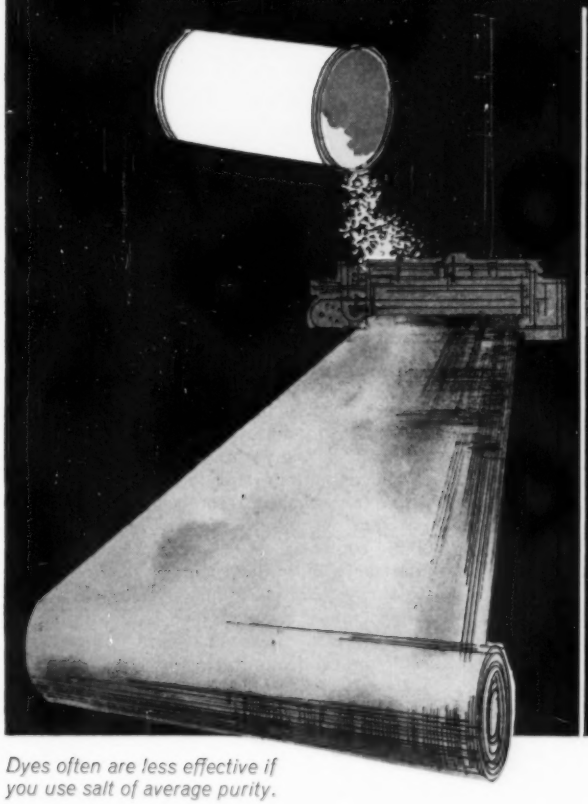
Small Limit Switches

Two series of small limit switches have been announced by Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.: (1) E6 for side mounting and (2) V6 for bottom mounting.

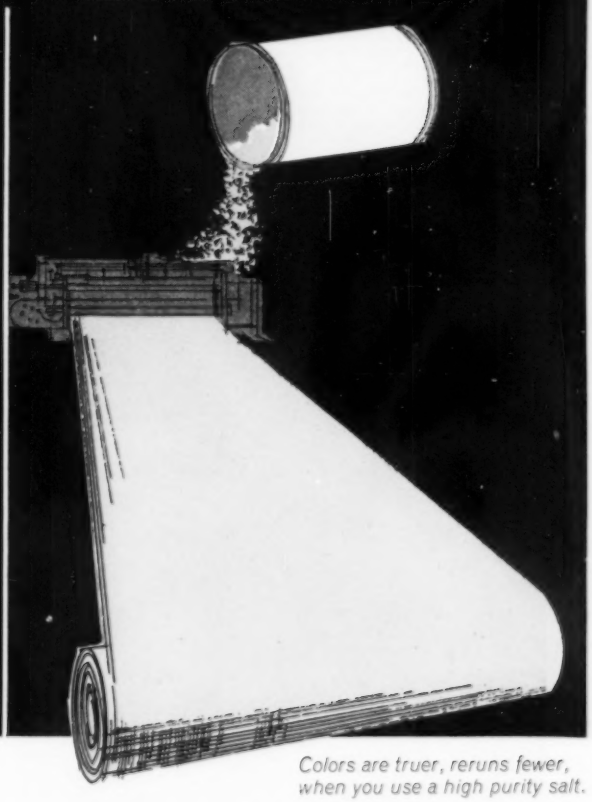
These switches are compact, have simple terminal connections, and are rugged in construction. But they are interchangeable with old E and V switches because they have the same envelope dimensions and mounting.

Circle T-9 on Reader-Service Card

Let your dyes do the job the manufacturer intended!



Dyes often are less effective if you use salt of average purity.



Colors are truer, reruns fewer, when you use a high purity salt.

Use Morton Chemical Grade 999 Salt

Morton Chemical Grade 999 is the all sodium salt (sodium chloride and a trace of sodium sulphate) that many dye manufacturers use in testing their dyes. When you use Morton Chemical Grade 999 Salt in your operation, it complements your dyes . . . makes them more effective, and helps you get softer finishes, more even shades, and greater color intensity.

And no wonder! Morton Chemical Grade 999 is more than 99.9% pure sodium chloride. It is a low cost, high purity evaporated salt free from objectionable calcium and magnesium compounds that may precipitate or react with dyes to reduce their effectiveness.

Available in 100-lb. bags or bulk, Chemical Grade 999 is recommended for use **whenever commercial calcium-free salt is required.** It's specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct, or naphthol dyes.

☐ *Please send me more information about Morton Chemical Grade 999 Salt.*

☐ *I would also like to know how much I can reduce calcium and magnesium content by using Morton Chemical Grade 999 Salt. Please have a Morton Brine Engineer arrange a mutually convenient time to discuss the benefits of using Chemical Grade 999 Salt.*

Name _____
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Title _____

Company _____

Street _____

City _____ Zone ____ State _____

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. TW10-58 120 So LaSalle Street,
Chicago 3, Illinois

Tow Folder

A tow-folding machine that runs 1,300 ft. per min. has been announced by Fleissner & Sohn, G.M.B.H. & Co., Maschinenfabric, Egelsbach-Frankfort/Main, Germany. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass., has been licensed to manufacture the machine in the U. S.

Laps are placed on a conveyor belt parallel to each other to form a blanket. The conveyor leads directly to the next processing stage so that the tow is not damaged in transit. Vibration and noise are negligible because of the elimination of oscillating parts.

The tow is folded without tension and does not pile up at points where the direction is reversed. Feeding speed is adjustable so that the length of laps and their angle to the edge of the conveyor can be selected as desired.

A major advantage is that either smooth or crimped tow is permitted to shrink freely without the operator having to take into consideration the shrinkage curve of the material. The machine can be used in conjunction with the Fleissner drum dryer and drum processing bowl.

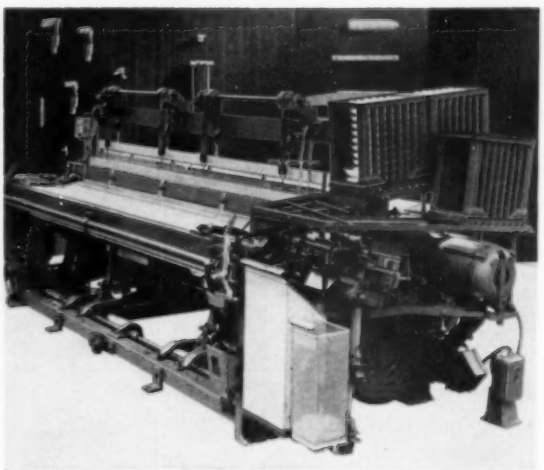
Circle T-10 on Reader-Service Card

Loom for 82-In. Sheeting

An 82-in. XP-2 loom that runs 153 ppm. on 86x94 sheeting with 32.5s-warp and 37-filling yarn is being sold by Draper Corp., Hopedale, Mass. The loom has centralized lubrication of harness cams, picking motion, and crankshaft and camshaft bearings.

Other features are pin-and-sleeve parallel, No. 4 Bartlett let-off, Draper's automatic filling magazine, electric warp stop motion, scissors thread cutter, and No. 14 shuttle check.

Circle T-11 on Reader-Service Card



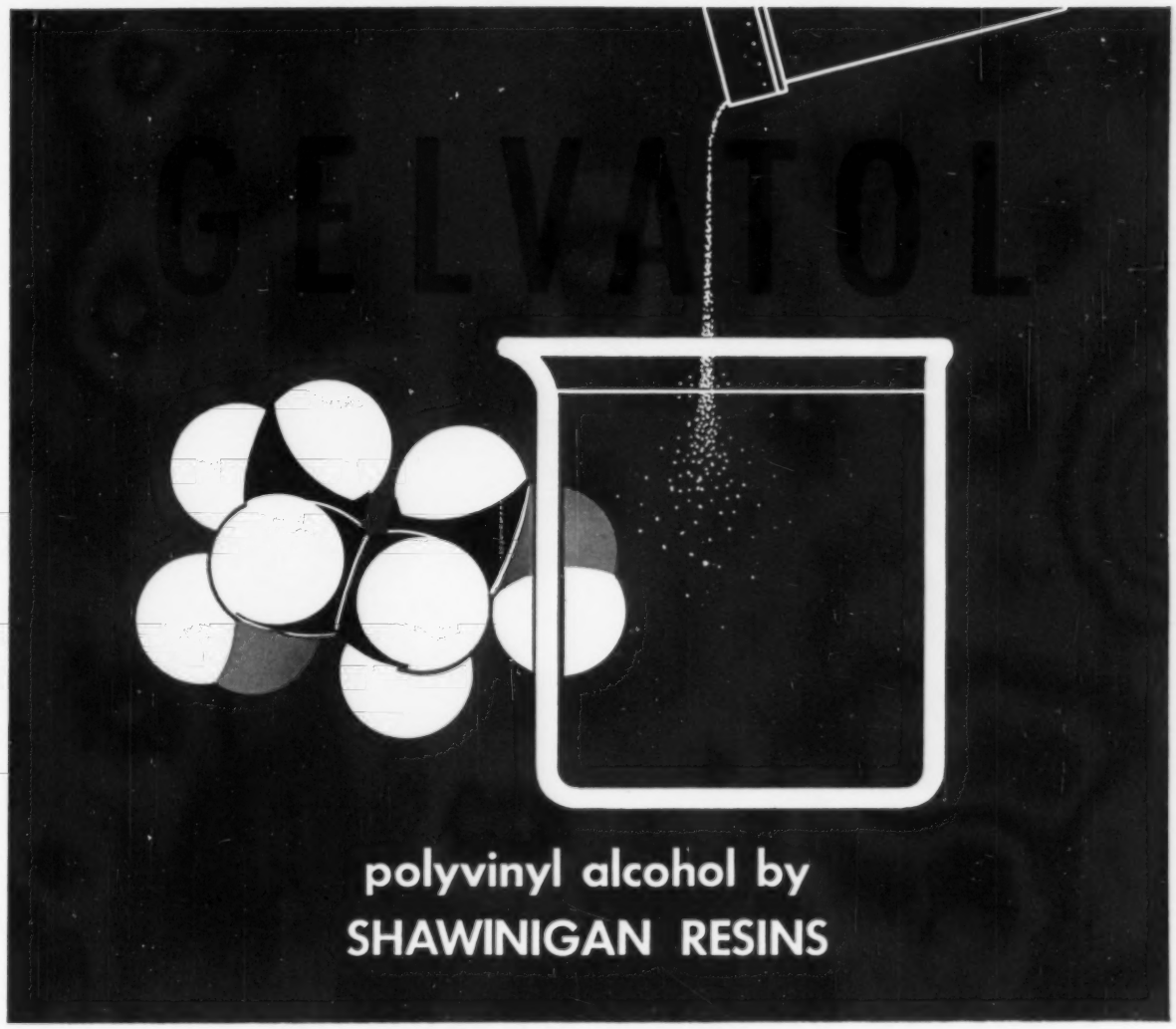
Cheese Winder

A heavy-duty cheese winder that winds five diamonds around the circumference of each package has been announced by Thomas Holt Ltd., Rochdale, Lancashire, England. Winding speed is 450 yds. per min.

The wind is maintained by back-driving the traverse guide from the winding spindle that is powered by contact with a plain steel drum.

A detector bar fitted with a Micro switch stops the machine when an end breaks. To prevent slippage when the machine is started, a flat spring presses against the front of the spindle for a short period at the beginning of each wind.

Circle T-12 on Reader-Service Card



has high dissolving speed

The unique particle structure of GELVATOL, polyvinyl alcohol, ensures fast wetting out of the resin and consequent faster preparation of solutions. With completely hydrolyzed grades, more time is saved by starting with warm water. The unique particle structure retards softening and lumping while speeding dispersion and ultimate solution.

Twelve grades of commercially proved GELVATOL . . . which meet all top quality standards . . . are now available to you for more efficient, more profitable formulating. There are standard grades for adhesives, textile sizes, paper coatings, and films, as well as the new extremely low-viscosity grades for specialty applications.

These are important advantages:

1. Rapid water solubility and clear solutions.
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3. GELVATOL requires 25-50% less storage space.
4. Notable uniformity from bag to bag, lot to lot.

Write today for full technical information and sales service to Shawinigan Resins Corporation, Department 1310, Springfield 1, Mass.

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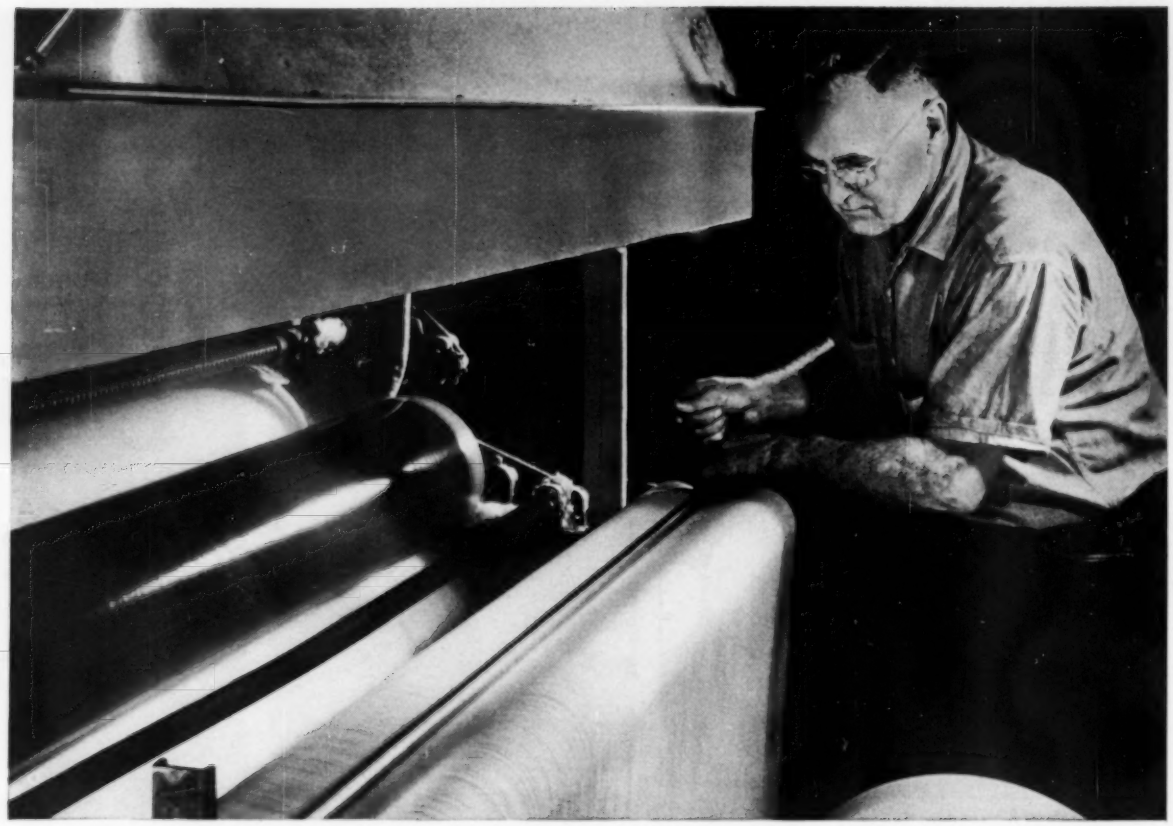

How Modern Mills Improve Slashing Operations

Time after time, mills around the country report greatly improved slashing operations with TEN-O-FILM starches. Compatible with most adjuncts and available in a wide range of fluidities, TEN-O-FILM users praise its many unique operating advantages.

TEN-O-FILM is ready to use after cooking thirty minutes. Many mills find need for less plasticizer than with conventional starches. The stability of TEN-O-FILM keeps size usable despite prolonged heating and cooling. Size made with TEN-O-FILM does not congeal or "skin over" at lower-than-normal temperatures . . . it can be held for reasonable shutdown period without gelation.

TEN-O-FILM offers several additional features including unequalled clarity of film, economy in desizing and dyeing.

Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Other fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® starches • GLOBE® and EXCELLO® dextrines

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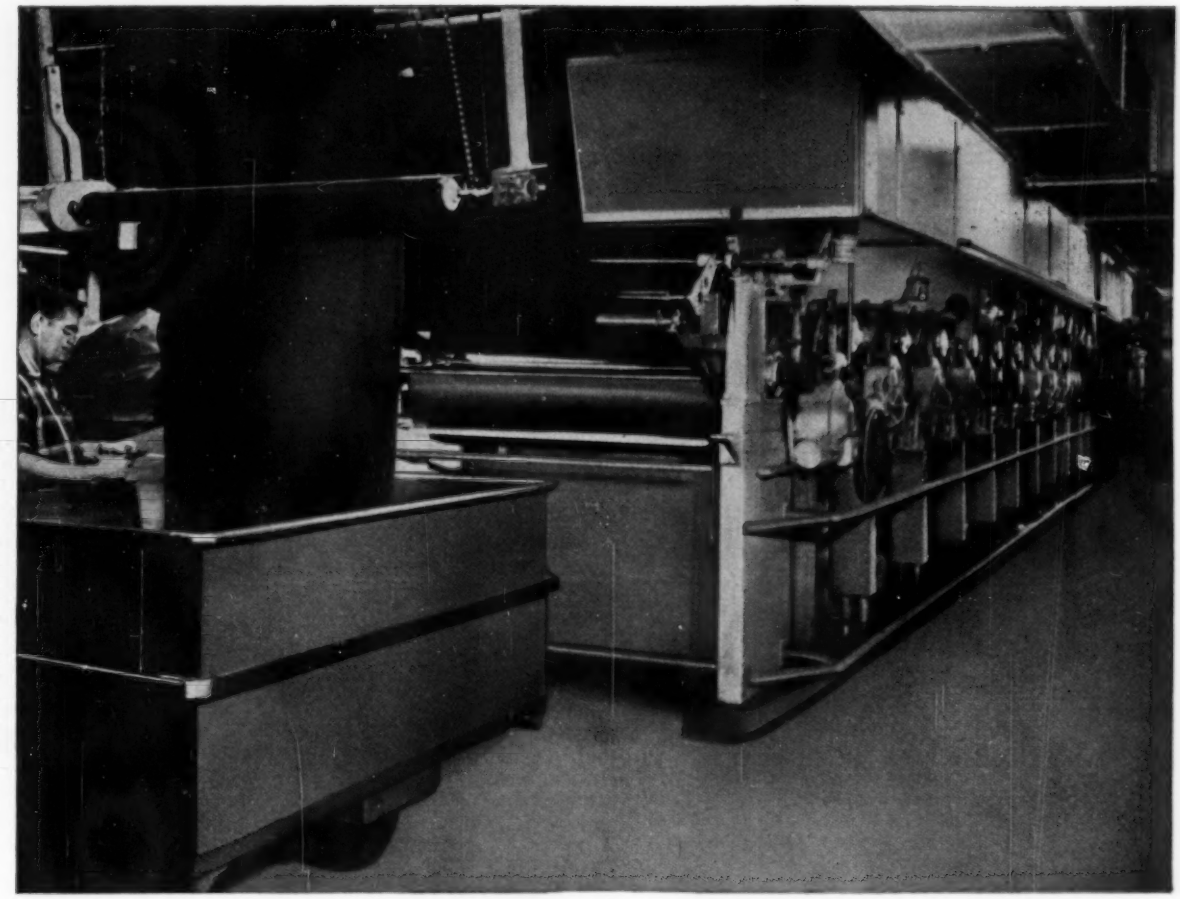

ANOTHER LEADER LIKES LYKOPON

Both Union Bleachery, Greenville, S. C., and LYKOPON, the Rohm & Haas concentrated sodium hydrosulfite, are known throughout the textile industry as leaders. Founded fifty-five years ago, Union Bleachery has a reputation for high quality finishing operations. One of the oldest firms of its kind in the South, it is also one of the most modern in equipment and facilities. LYKOPON, for its part, was the first sodium hydrosulfite to be produced in this country. Over the years it has earned the confidence of leaders among finishing mills, including Union Bleachery. Uniform strength (94% minimum guaranteed, as shipped) and unusual freedom from dusting underlie the reputation of LYKOPON for quality. LYKOPON probably can be used with profit in your particular operation. May we show you how?

Chemicals for Industry

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LYKOPON

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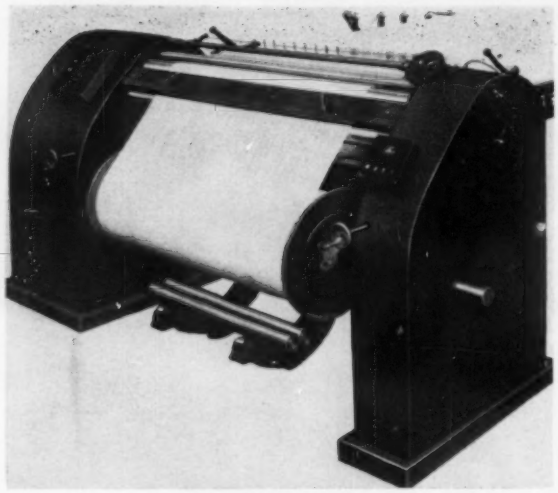


Multicylinder Slasher

A slasher with a headstock for a 28-in.-dia. beam, 63-in. face cylinders, and 56-in. double-roll size applicator has been developed by J. Hibbert & Co. Ltd., Darwen, Lancashire, England. Sales agent is Platt Bros. (Sales) Ltd., Oldham, England.

The headstock has a mechanical drive that provides predetermined tension throughout the build-up of the beam. The only electrical equipment is an a.c. squirrel-cage motor and control gear. Winding speed is 0 to 100 yds. per min.

Stainless-steel cylinders are for steam pressures up to 40 psi. A positive chain drive to the cylinders and an automatic constant yarn-tension control determine yarn stretch and velocity during drying. Guide rolls and the first two cylinders are covered to prevent yarn from sticking.

Size applicators have either one or two rolls, and hydraulic loading is provided on both. Size level is controlled by a sensitized electrode. Rubber-covered squeeze rolls are optional.

Circle T-13 on Reader-Service Card

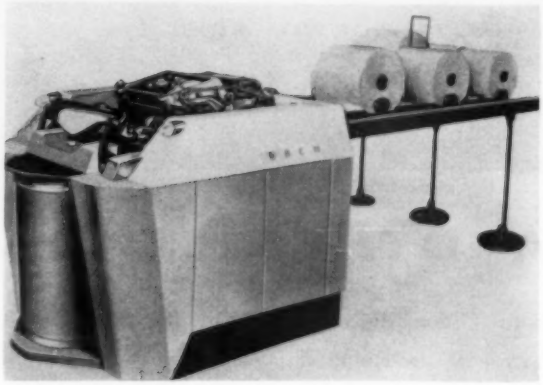
Worsted Comber

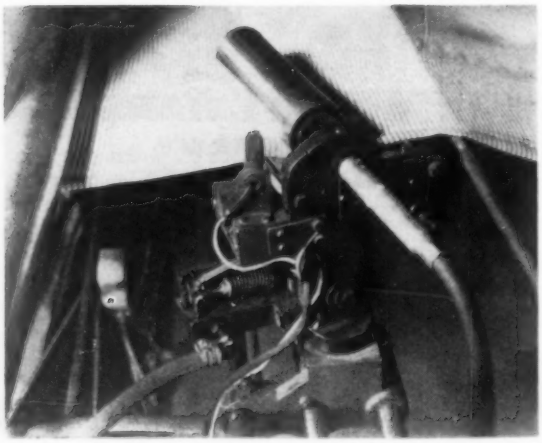
A high-speed worsted and man-made-fiber comber that runs 175 nips per minute has been announced by Societe Alsacienne de Constructions Mecaniques, France. United States sales agent is Atkinson, Haserick & Co., Inc., Framingham, Mass.

The machine, called Perl, has a suction system for the underside; double cleaners for the top comb increase sliver quality and reduce stops.

The comber can be fed from three wool laps in the creel instead of from multican or multiball systems. Production is about 50% greater than for the previous-model comber produced by SAC.

Circle T-14 on Reader-Service Card



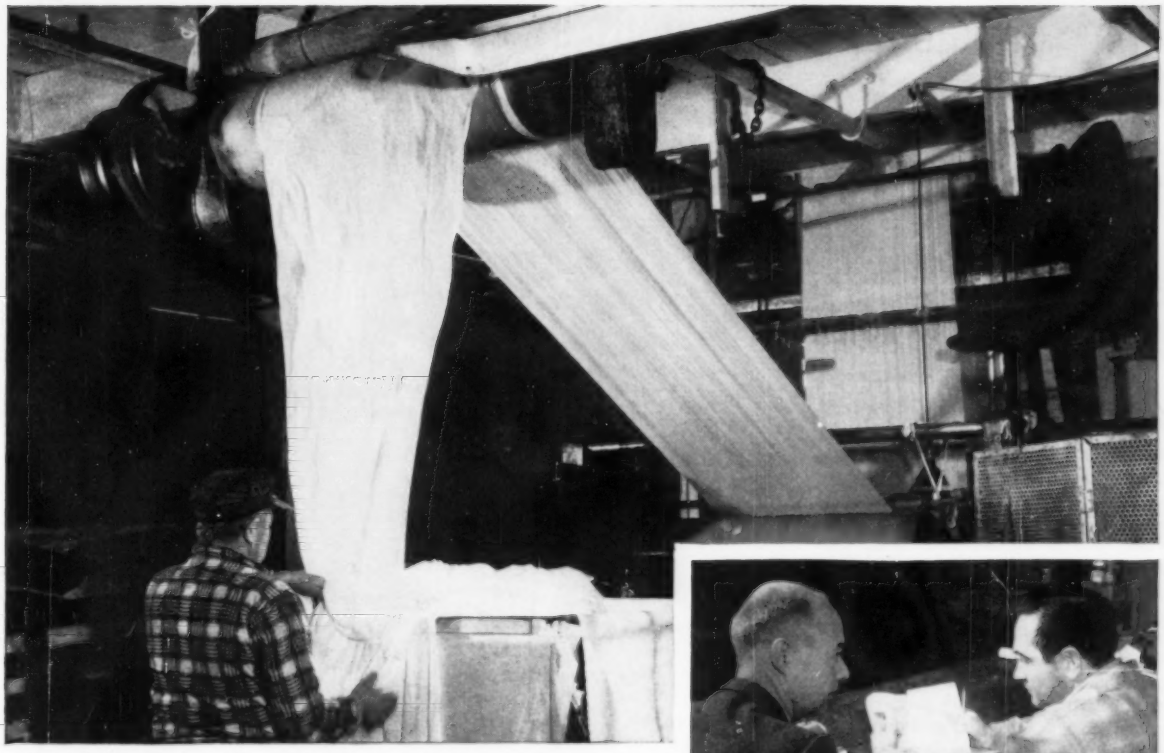


Soft-Fabrics Guider

A guider for knitted goods and other soft fabrics, announced by Guider, Roll and Service Co., Box 3747, Peninsula Station, Daytona Beach, Fla., has electric-eye controls to control the opening and closing of the rolls as the fabric is guided. The roll is mechanically turned by a flexible shaft driven by a jack shaft from the roll-up machine or a small motor synchronized with the cloth speed.

An electric eye on each side of the cloth guides the fabric. If the cloth moves out of line $\frac{1}{2}$ in., the light beam is interrupted. Installations can be made on horizontal or vertical runs of cloth in all cloth widths.

Circle T-15 on Reader-Service Card



• Bleached "rope" of cloth is spread out before trip to drying cans. (Inset) Mr. E. R. Rand (right), Dale Brook V. P., and Du Pont technical man, who worked with Dale Brook, compare samples of cotton goods before and after bleaching with Du Pont's Solo-Matic peroxide bleaching process.

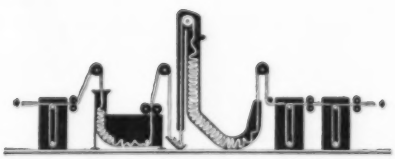
DALE BROOK Finishing Company

INCREASES PRODUCTION 100%...CUTS LABOR COSTS 40%

using existing equipment and Du Pont SOLO-MATIC bleaching process

"These gains were made without adding any costly new equipment, or losing any production during the change-over," says Mr. E. R. Rand, V.P. & General Manager of Dale Brook Finishing Co., Inc., Div. of Dubin-Haskell-Jacobson, Inc., Hohokus, N. J. "Common-sense technical service," he continues, "helped us make the change. The Du Pont representative worked closely with us and showed us exactly how we could switch to the Solo-Matic peroxide bleaching process, using our present equipment."

Du Pont's Solo-Matic peroxide bleaching process can offer *you* similar advantages with additional savings in steam, time and water, using your existing equipment. Or if increased production is not your problem, the Du Pont Solo-Matic process helps you maintain your present production levels in *half* the plant space required for conventional two-stage systems. If you plan to install new bleaching equipment . . . or alter your present setup...it will pay you to contact your Du Pont representative or write us at the address below for the complete Solo-Matic story.



Du Pont's Solo-Matic process—the most advanced single-stage hydrogen peroxide bleaching process available.

DU PONT ALBONE®
hydrogen peroxide

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...THROUGH CHEMISTRY

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Peroxygen Products Division

E. I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington 98, Delaware

For more data, circle A-50 on Reader Service Card

WHAT YOU SHOULD KNOW ABOUT STARCH*

What's in a BAG of STARCH for You

Many a manufacturer of cloth regards a bag of starch simply as a bag containing a white powder that is mixed with cold water and then heated. If he is an "ole timer," he has made many batches of size, has seen pipe lines choked with gelled starch, knows first hand the headaches caused by hard size on the slasher and in the loom. He has seen whole kettles of size dumped at the end of a set or on shutdowns. Shed under the slasher, where the yarns were separated that had been glued together during the sizing and drying process, and loom shed was accepted as a necessary evil—something to be gathered up and carted away at convenient intervals.

In the past few years, he has seen many changes in size preparation. The homogenizer, the jet cooker, and finally the continuous jet cooker, the covered size box, rubber covered rolls, and air dryers have made their appearance on the scene. Then, there are these noncongealing starches, such as, OK-Waxyfilm and OK-Waxy XLT, and finally there is a family of noncongealing starches that are positively charged, e.g., OK-Keotacs.

These innovations stimulated by his problems have made some contributions to the practice of his art. He wonders what will be next.

To the starch chemist, a bag of starch is a collection of starch granules that have been separated from the corn kernel and washed and dried. A granule is a package of starch that can be washed in warm water and dried. A bag of starch granules as such has only limited usefulness. When these granules are slurried in water and heated, they first swell and collapse and fragment and form a paste. This paste finds many uses.

A swollen granule is only slightly more useful as an adhesive than is an unswollen granule. Fragmented granules are what give a paste adhesive value. Therefore, to get the most adhesive value from a paste, every granule must be fragmented. To obtain maximum fragmentation, some of the continuous cookers now in use employ temperatures well above the boiling point of water.

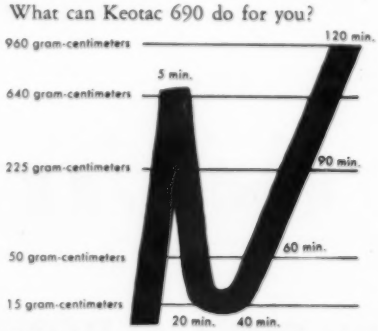
The fragments are crystalline portions that could be made to contribute more to the adhesiveness of the paste if they were broken into even smaller fragments. Tremendous shearing forces are in use today in some textile mills to accomplish this.

To keep these fragments separated, the chemist has found two (2) substituents or "bumps" on each 100 chain links do a creditable job. Of course, four (4) "bumps" per 100 chain links do a better job. This also eliminates the problem of pipe lines becoming choked with gelled starch because these pastes are fluid at room temperature. These substituted granules also have the property of swelling and fragmenting in a water slurry at a lower temperature than unsubstituted granules.

One of the more recent starch derivatives to be marketed has cationic substituents. The fragments of ordinary starch in a water paste have a slight negative charge, as does yarn in the size box. Cationic starches, such as Hubingers Keotacs, have a positive charge in a water paste. There is an attraction, then, in the size box—between the yarn and the starch, whereas, with any other type starch, there is a slight repulsion.

Besides possessing a positive charge, these granules may be substituted up to six cationic substituents per 100 glucose chain lengths, they are easily fragmented and the paste is fluid at room temperature. As expected, performance reports are very favorable in this type starch in warp sizing, especially, on synthetic blends, where some of the filaments acquire a static charge.

What can Keotac 690 do for you?



This phenomenon of a viscosity rise upon prolonged cooking may be useful in your process.

* ONE OF A SERIES OF ARTICLES, FOR THE COMPLETE SET AND FOR OUR CONTINUING TECHNICAL DATA SERVICE, WRITE WITHOUT OBLIGATION TO:

The Hubinger Company

HUBINGER 77 YEARS

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THE KEY TO *Bigger Profits . . .*

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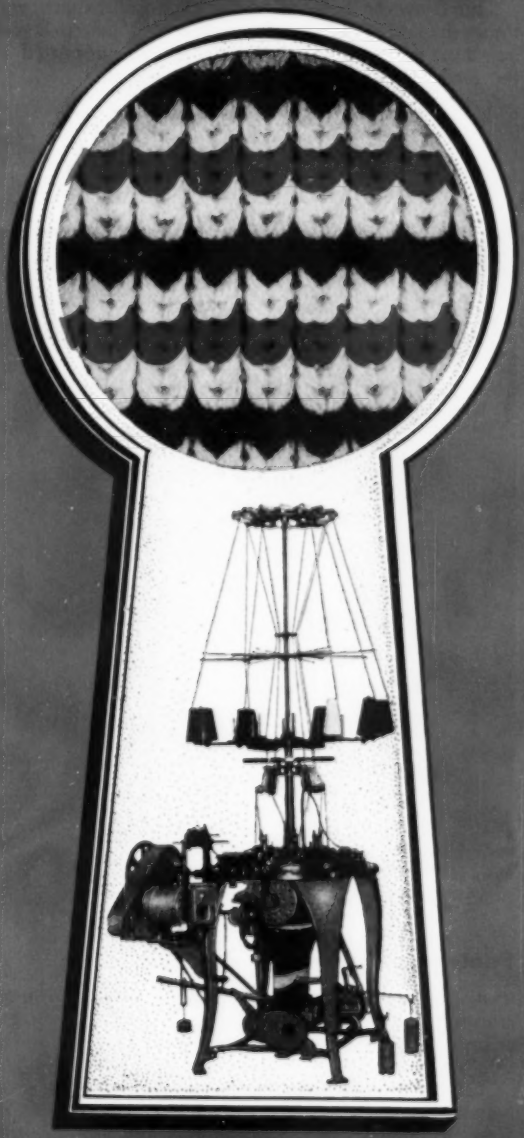
KNIT ON LEIGHTON MACHINERY

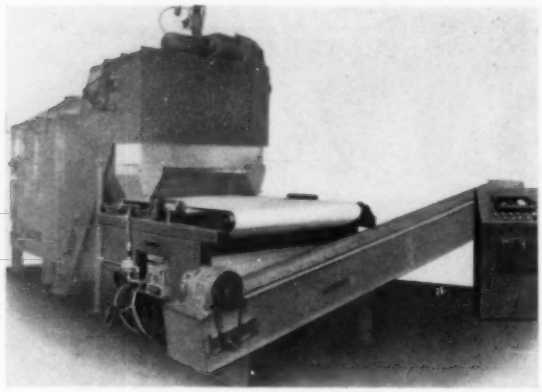


LEIGHTON Circular Coarse Gauge Knitting Machines will easily handle New Synthetic yarns (Orlon & Nylon) as well as wools and cottons in the new bulkie stitch. Coarse Gauge Racking Machines, produced by LEIGHTON for 70 continuous years, are famous for High Quality Production, Rugged Construction and Low Maintenance Cost. These machines are available in standard two to fourteen cut with two or three color stripes.

LEIGHTON MACHINE COMPANY

. . . MANCHESTER, NEW HAMPSHIRE . . .

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES



Feeder Weighing Belt

A controlling weigh belt that feeds fibers within ± 1% of standard has been announced by Proctor & Schwartz, Inc., Seventh St. and Tabor Rd., Philadelphia 20, Pa.

The conveyor belt, which is chemically inert, continuously and automatically weighs the material passing over it. Variance is immediately transmitted to the feeder control and the speed is adjusted.

Circle T-16 on Reader-Service Card

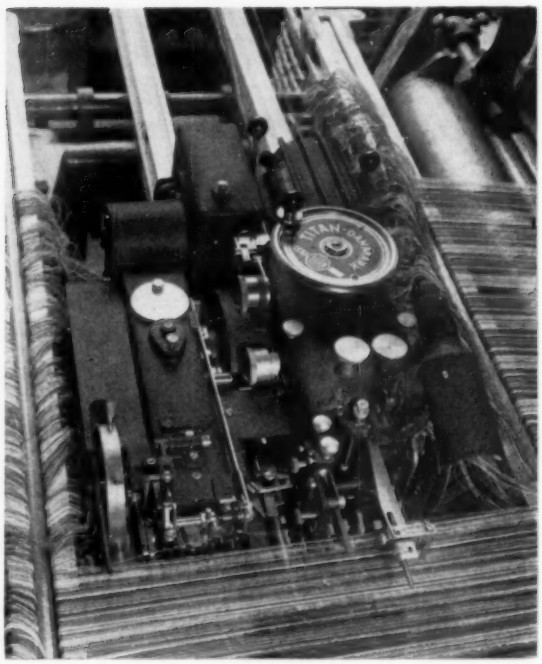
Machine Ties Coarse Yarns

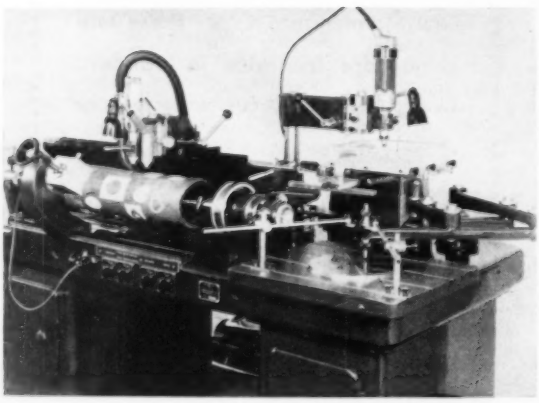
A portable warp-tying machine for very coarse yarns has been announced by Edda International Corp., 468 Fourth Ave., New York 16, N. Y., and Calhoun Towers, Greenville, S. C. The machine ties warp yarns for papermaker's felt, tire cords, and carpets.

This machine, Titan GK-6BX, is much like the manufacturer's other machines but has the following special features: tying head, jaw with rod, knife and knife holder, and thread brake. It also has a chain drive to facilitate waste removal.

Coarse yarns that have been tied satisfactorily with the machine are: wool, worsted, jute, rayon, and nylon.

Circle T-17 on Reader-Service Card





Pantograph

A pantograph that will engrave rolls for textile printing has been marketed by Michael Kanph, Germany. U. S. representative is The de Florez Co., Inc., 200 Sylvan Ave., Englewood Cliffs, N. J.

The machine will engrave copper, rubber, or plastic rolls and uses a cutting tool that operates at 45,000 rpm. to remove areas not required to reproduce the design.

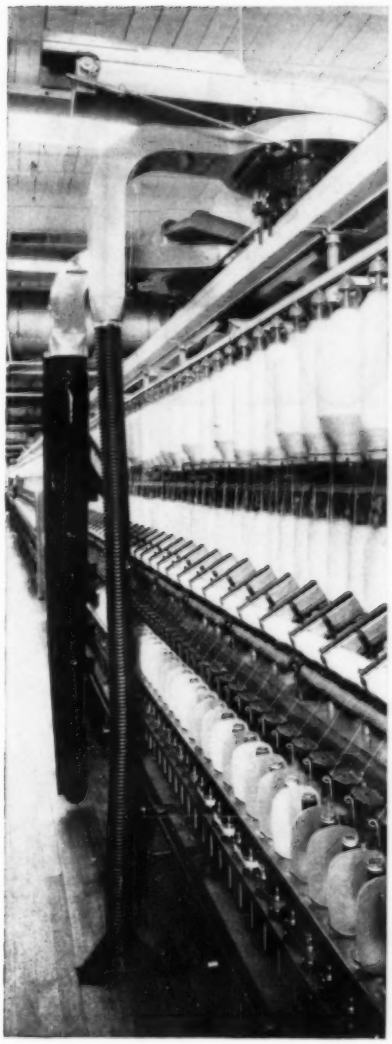
Circle T-18 on Reader-Service Card

CONTINUED ON PAGE 146

Picks lint up and takes it away!

See the Traveling Vacuum Cleaner at the Southern Textile Exposition, Greenville, S. C., October 6-10, 1958, Booth 502

TRAVELING VACUUM CLEANER

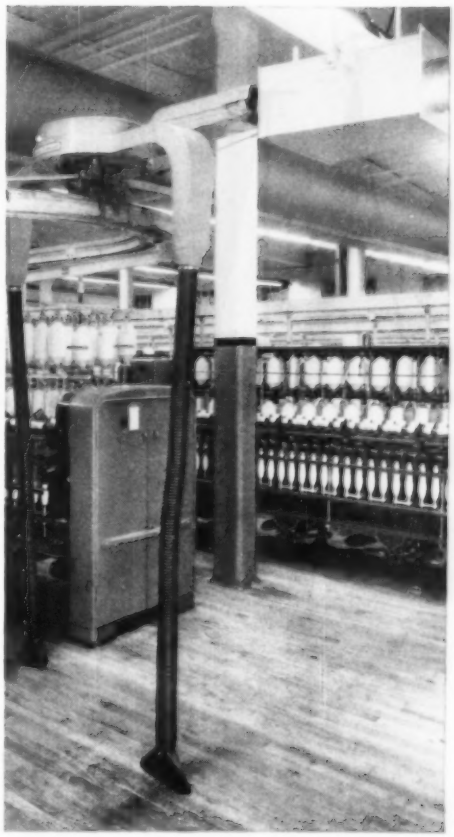


Travels with Frame Cleaner introducing floor level suction adjacent to underframe flexible sleeves.

Frame Cleaner puts lint into spinner's alley. Vacuum Cleaner removes it.

Once a trip, collected lint discharged into vacuum receptacle . . .

The most important step forward in the cleaning art since the introduction of extended flexible sleeves.



Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

411

announcing...

THE AMERICAN *IDEA

in Celanese

130 For more data, circle A-54 on Reader Service Card TEXTILE WORLD, OCTOBER, 1958

What the Celanese 1959 promotion "The American Idea" means to a grey goods mill

Celanese believes that the only sale that counts in the textile business is the retail sale.

We, at fiber level—you, at mill level—still base our profits on what happens when Mrs. America comes into the retail store.

That's why the announcement of "The American Idea," our Fall 1959 Home Furnishings Promotion is so important to you *now*—a year in advance. Only through this type of long-range planning can you be sure your goods will be where the crowds are, when the big promotion breaks next Fall. At that time millions of yards of fabrics containing Celanese fibers will move at retail under the banner of this single selling idea—"The American Idea."

This is the third year that Celanese has staged a major home furnishings fabrics promotion—backed by powerful national advertising, decorating shows, strong editorial publicity, point-of-sale aids of all kinds.

Last year converters styled over 1200 fabrics for inclusion in this promotion. Hundreds of top stores gave over whole departments to it. And 1959 will be bigger.

This is something every key person in your organization should know about. Talk to your home furnishings converters now. Get set on basic constructions and other big run fabrics in all of the appropriate Celanese fibers—acetate, Arnel triacetate, Celaperm acetate, Fortisan rayon and Celaire acetate.

And don't forget—Celanese has a wealth of new fabric information and technical data that's yours for the asking. Ask your Celanese salesman. Celanese Corporation of America, New York 16.

Celanese® Arnel® Celaperm® Fortisan® Celaire®

contemporary fibers

Rhovyl, the synthetic staple fiber... **Good mixer:** Rhovyl is a proved blending fiber. Full range of deniers and cuts. **Comfort:** Rhovyl is more comfortable, warmer, smoother. 10 years of proved consumer acceptance. **Care-free:** Rhovyl fabrics wash easily, won't felt or shrink, dry rapidly, never need ironing. **Permanent pleats:** Rhovyl blends hold pleats. Pleating lasts through repeated launderings. **Wide color range:** Rhovyl fibers come in pure white and over 20 dope-dyed colors. Also dyes with napthols, acetates, and indigosols. **No burn:** Rhovyl is noninflammable. **Good filter:** Rhovyl® is pure polyvinyl chloride...unaffected by acids, alkalis, salts...and **only $1.18 per lb.** Rhodia Inc., 60 East 56th St., N. Y. 22, N. Y. (PLaza 3-4850)

New Polyester Fiber Planned

Teron is the trademark of a new polyester fiber that will be produced in the U. S. by a jointly owned subsidiary of Celanese Corp. of America and Imperial Chemical Industries Ltd. [See Textile World, Sept., '58, p. 45].

Teron will be produced in both staple and continuous filament. Major end uses will be apparel and home furnishings.

Kodel—New Polyester Fiber

A new polyester fiber, called Kodel, was launched last month by Tennessee Eastman Co. for use in spring, 1959, fabrics.

Experimental quantities of the new fiber—of the same fiber family as Dacron and Terylene—have been delivered to several mills for some time; but production will now be stepped up gradually to commercial quantities.

At present, Kodel is available only in staple form. Plans are to supply it also in filament form in the future.

Price now is $1.60 per lb. for 1.5-den. staple and $1.50 per lb. for 3.0- and 4.5-den. staples, f.o.b. Kingsport, Tenn.

Fabrics shown for spring, 1959, are all blends with cotton, rayon, wool, and linen. They range from 6-oz. and 8-oz. suiting to broadcloth shirting and gingham sport shirting.

For example:

An 8-oz. tropical in 60% Kodel and 40% wool is being made by Amerotron.

Burlington is making a 55-45 Kodel-rayon and a 50-40-10 Kodel-rayon-acrylic fabric.

Deering, Milliken has a 7-oz. gabardine and a 6½-oz. tropical of 70-30 Kodel-worsted.

Pacific Mills has an 8- to 8½-oz. tropical of 55-45 Kodel and worsted that it is calling "Tennessee Cloth."

J. P. Stevens is turning out several gray-goods fabrics containing Kodel, among them a challis of 55-45 Kodel-rayon, a novelty weave of 70-30 Kodel-cotton, and a 60-40 Kodel-combed cotton.

Stillwater Worsted is blending Kodel with wool in fall- and winter-weight suitings for men's and women's wear.

Finer Metallic Yarn

A finer, softer metallic yarn, called Superfine, was announced last month by Metlon Corp. Developed principally for use in apparel fabrics, the yarn gives a softer, more-pliable hand and much higher yield than the company's metallic yarns available before.

Like previous metallic yarns, Superfine is a metallic foil laminated with Mylar polyester film.

It is recommended for such uses as fine jacquard fabrics, sheers, and apparel knit goods.

Textured Nylon Sheets

Taslan textured nylon sheets, introduced recently by Pepperell Mfg. Co., are gaining customer interest, according to early reports.

Customers have shied away from nylon sheets in the past because the "nylon feel" was not desirable in sheets. Texturing is said to correct that feel but retains the long-wear and laundering qualities of nylon.

Nylon Carpet Labeling

A labeling program to combat the use of waste nylon for carpeting has been started by Du Pont.

Only carpets made of 100% Du Pont carpet nylon will qualify for labeling. The advantage to mills of using the labels is to benefit from the heavy promotion Du Pont plans.

Carpet makers planning to participate in the program include Barwick Mills, James Lees, Magee, C. H. Masland, Wunda Weve, Cabin-Crafts-Needletuft, and Nye-Wait.

Sculptured Blankets

Sculptured rayon-nylon blankets in leaf and plaid designs are gaining in sales since their introduction recently, retailers report.

Colors attracting attention are blue, brown, green, and marigold.

"Super" Rayon Called Tyrex

Rayon producers came up last month with a name for the new "super super" or "super 2" high-tenacity yarn for tire cord. They also formed a nonprofit corporation to promote it "through an extensive advertising and public relations program."

Tyrex is the name given the new yarn; and American Tyrex Corp., with headquarters in New York, is the organization formed to promote the yarn.

Fiber producers composing the new corporation are American Enka, American Viscose, Beaunit Mills, Courtaulds (Canada), and Industrial Rayon.

Sportswear Cotton Fabrics

Fuller Fabrics, a division of J. P. Stevens & Co., displayed a wide range of fabrics in men's spring, 1959, sportswear last month. Fabrics included woven cottons, knit goods, printed sailcloths, Arnel sharkskins, cotton-rayon tweeds, and cotton-Dacron blends.

Among the knit-goods sportswear were vests, golf shirts, sport shirts, and sweater-vests.

Sailcloths or sailcloth-terrycloth

combinations were used in beach shirts, jackets, and kimonas.

No-iron cottons used in various sportswear items included poplins, twills, and yarn-dyed stripes.

Misuse of Fiberglas

Ready-made Fiberglas draperies of "bargain basement" quality were hit last month by Owens-Corning Fiberglas Corp. in warnings to buying offices, stores, and manufacturers.

The draperies are made of fabrics woven from uncoronized Fiberglas and roller printed. This grade of fiber is designed for industrial uses only, Owens-Corning advised.

All Fiberglas fiber intended for decorative uses goes through the coronizing process.

Reversible Knit Goods

Reversible knitted fabrics and knit goods textured to resemble crepe will show up in spring, 1959, sport shirts and swim wear. Most of the knitted fabrics will be blended yarns, chiefly Orlon, Dacron, and Zefran blended with cotton and wool.

For the reversibles, colors are mostly solids; for example, one fabric has a solid-color jersey effect on one side that reverses to a solid-color bird's-eye tweed.

For the crepe-effect fabrics, pastel colors in stripes or solids trimmed in white predominate.

New Argyle Patterns

Argyle-sock patterns will be more conservative this fall and winter. The big, colorful diamond patterns are giving way to much smaller patterns on solid grounds in both U. S.-made and imported socks.

Patterns vary from small diamonds framed by a large diamond and very small diamonds arranged in spotted-diamond effect to one, two, or three diamond dots—all on solid grays, blues, and blacks.

Textured-Nylon Carpets

Carpets made of textured filament nylon yarns were displayed last month by Croft Carpet Mills, manufacturer of the carpet; Leon Ferenbach Co., which texturized the filament yarn; and National Aniline Div. of Allied Chemical Co., maker of the Caprolan nylon yarn.

The 19-den.-per-filament yarn is said to have high resilience and the textured effect to offer new possibilities for carpet construction and surface effects.

Arnel in Sportswear

Arnel moved into new lines of spring, 1959, sportswear fabrics this fall in woven wash-and-wear blends that simulate knitted fabrics.

Among the new fabrics are: several designs and colors of 100% Arnel for sports outerwear, neckwear, and basque shirts; and an 85-15 blend of Arnel-Dacron in crossed stripes for shirts and lightweight jackets.

Wider Print Cloth

One or two old standard constructions of print cloth and broadcloth may be largely replaced by wider and slightly heavier constructions, market observers report.

For some time, 41-in. 78x78 4.05-yds.-per-lb. print cloth has been nudging its way into uses historically occupied by the standard 39-in. 80x80 4.00-yds.-per-lb. construction. Users are reported to like the extra width and the way the cloth behaves after resin treatment.

The 41-in. width in 72-80 4.15-yds.-per-lb. broadcloth for shirting is getting stronger reception also for the way it stands up to resins.

So far, the standard constructions are still sold in large volume, but the 41-in. widths are steadily gaining ground.

Tricot Spring Fabrics

Fenimore Fabrics is featuring a spring, 1959, line of tricot sportswear fabrics knitted of solution-dyed yarn decorated with metallic stripes. The chief use for the fabrics will be men's sport shirts.

Lighter Colors and Weights

Apparel fabrics for 1959 men's wear show two strong trends: lighter colors and wider use of wash-and-wear finishes.

The success this year of 6-, 6½-, and 7-oz. blended fabrics in suitings is having an effect on constructions shown for spring, 1959.

Palm Beach Co., for example, is making its first major fabric change in 10 years by swinging toward both lighter-weight fabrics and wash-and-wear.

In addition to standard-weight Palm Beach, the company will include in the Palm Beach line a 6½- to 7-oz. 55-40-5 blend in Dacron-rayon-mohair, Dacron-Orlon, Dacron-Orlon-rayon-mohair, and Dacron-cotton; a 6-oz. and an 8-oz. 55-45 Dacron worsted; and a 9½-oz. 60-40 worsted-kid-mohair.

Medium shades will be emphasized, and most of the suits will be wash-and-wear.

Many retailers report that a strong style swing away from dark colors to medium, and even light, shades is under way. Grays and blues are in strong demand, but browns and tans are getting more interest than in several seasons.

He's available when you ***NEED*** *him*

So are Franklin-Dyed yarns

Yes, Franklin Yarn Dyeing Service is always handy, always dependable, when you NEED it. When you don't, it isn't part of your overhead. Just contact the nearest of our 4 strategically located plants and you'll receive expert and prompt attention.

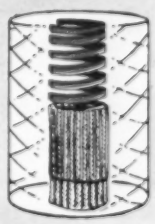
And here are additional benefits from using Franklin Dyed Yarns—all important to you:

QUALITY — We dye exclusively on the Franklin compressible spring. This permits uniform density of packages, which promotes uniform penetration of the dye liquor and resultant uniform shades.

SPECIALIZATION — Yarn dyeing is our specialty. We don't dye just to make yarn sales. Our 4 plants and our entire organization have but one objective — to provide the best yarn dyeing service available.

CONSULTATION — We can help you with your color problems. We have unequalled laboratory facilities, a staff of highly skilled technicians, unequalled experience in time, variety and volume — all at your service.

CAPACITY — With our multiple plants and diversity of equipment, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity. Contact our nearest plant or office.



X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

Franklin Process

A DIVISION OF INDIAN HEAD MILLS

Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

Philadelphia • Greenville
Chattanooga • Fingerville, S. C.
New York Office—111 West 40th St.
Providence Office—611 Turks Head Bldg.

6-8

*Trademark for Dupont's acrylic fibre

**Trademark for Dupont's polyester fibre

For more data, circle A-57 on Reader Service Card

cotton

yarn

dyed by

GLOBE

for trouble-free knitting and good color matches . .

Cotton yarns dyed by GLOBE are your assurance of bright, clear colors, good matches, and superior knitting qualities.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns processed include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also all synthetics.

Globe DYE WORKS CO.

1865 1958

4500 WORTH STREET PHILADELPHIA 24, PA.

For more data, circle A-58 on Reader Service Card

NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Skewed wefts—Bulletin describes new machine called Skew Liner that automatically corrects skewed wefts in any kind of cloth at maximum speeds. Mount Hope Machine Co., Inc. (F-1)

Adjustable-speed drives—Described in two bulletins from Cutler-Hammer, Inc. (F-2)

Dehumidification equipment — For plants, warehouses, and laboratories described in folder from Abbeon Supply Co. (F-3)

Air conditioning—Bulletin describes line of multizone units that handle from two to eight zones from one central station. American Air Filter Co., Inc. (F-4)

Textile motors—From 7½ to 25 hp. that are totally enclosed and fan cooled are described in bulletin from General Electric Co. (F-5)

Fans—Capable of air movements from 220 to 324,960 cfm. are described in illustrated bulletin from Chicago Blower Corp. (F-6)

Speed-measuring instruments — Described in bulletin from James G. Biddle Co. (F-7)

Motors—Dimensional data, specifications, and prices for 1/20 to 200-hp. motors are given in technical bulletin from Marathon Electric Mfg. Corp., (F-8)

Plastic tanks — Corrosion-resistant tanks and plastic materials are discussed in booklet from Haveg Industries, Inc. (F-9)

Compressed-air products — Catalog 157 describes automatic moisture separators, lubricators, regulators, filters, and filterators for compressed-air systems. Wilkerson Corp. (F-10)

Infrared ovens—Folder describes infrared-oven sections for batch-type requirements for baking, drying, and product heating. Lighting Div., Safety Industries, Inc. (F-11)

Wound-rotor motors—Bulletin GEA-6713 describes rotor-wound motors from 5 through 150 hp. with adjustable variable speed. General Electric Co. (F-12)

SUPPLIES & CHEMICALS

Methyl butynol and pentynol—Chemical properties are discussed in 60-p.

WARNING!

all that glitters is not Metlon!

Despite the fact that most metallics are made of the same basic ingredients . . . aluminum foils and DuPont's Mylar polyester film . . . the end products vary tremendously in their ability to withstand manufacturing processes, and to perform as advertised in the consumer products in which they ultimately appear. Why? Simply because of the way they're fabricated.*

HOW CAN YOU BE SURE THAT THE METALLICS YOU USE WILL LIVE UP TO THEIR GLITTERING PROMISES?

One good way is to insist on Metlon Metallic Yarns. There are six different kinds of Metlon yarns . . . each with different virtues and limitations. The Metlon Corporation tells you exactly what you can expect of each one.

OUR TECHNICIANS WILL HELP YOU TO CHOOSE THE RIGHT METLON YARN

for your particular manufacturing problem. They'll put their years of experience in the exciting world of metallics at your disposal whenever you say. They can save you time, money and returns . . . and their assistance is yours for the asking.

METLON®
with MYLAR*
METALLIC YARNS

*DuPont's Registered Trademark for its Polyester Film.

THE METLON CORPORATION, 432 Fourth Avenue, New York 16, N.Y. A Subsidiary of Acme Backing Corporation

Whatever you buy

IN TEXTILES "made in U.S.A."

gives quality you can trust

Stickers for your mail are offered at no charge. Large quantities at cost as a public service.

YOU CAN REDUCE YOUR COST

. . . you can process more yards per penny spent for rolls IF you will use the S-W ROLL-GUARD Plan.

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

STOWE-WOODWARD, INC. Griffin, Georgia · Newton Upper Falls, Mass. · Neenah, Wisconsin

NEW LITERATURE Continued

book from Air Reduction Chemical Co. (F-13)

Laboratory supplies—Catalog lists expanded line of glassware from Fischer & Porter Co. (F-14)

Textile chemicals—Over 50 products are described and cross indexed according to usage in booklet from Textile Chemicals Div., Nopco Chemical Co. (F-15)

Dye guide—Chart tells dyers at a glance what additives to use for 93 direct dyes. American Cyanamid Co. (F-16)

Vat dyes—A 16-p. educational booklet, "The Story of Vat Dyes," covering the development and use of this class of dyes, has been published by Vat Dye Institute, Inc. (F-17)

Polyviny-acetate emulsion — Booklet tells how to use emulsions in fabric finishing. Celanese Plastics Div., Celanese Corp. of America (F-18)

Chemical mixing — Folder describes laboratory facilities available for mixing research. Mixing Equipment Co., Inc. (F-19)

Viscometer—For testing the physical properties of starch pastes is described in bulletin from Gaertner Scientific Corp. (F-20)

Stainless steel—For use in process industries is discussed in 40-p. booklet from Allegheny Ludlum Steel Corp. (F-21)

Chlorine analyzer—Technical bulletin tells how a double-light beam filter photometer can measure residual or combined chlorine in water or sewage. Fischer & Porter Co. (F-22)

Belting—Adhesion transmission belting is described in folder from Coriamid, Inc. (F-23)

Chemical products — Booklet covers line of adhesives, coatings, antistatic agents, cleaners, and lubricants. Chemical Development Corp. (F-24)

Electron-microscope grids — Catalog describes EFFA grids for electron microscopy. Ernest F. Fullam, Inc. (F-25)

MAINTENANCE & ENGINEERING

Tool mounts — Operation and parts manual tells how to suspend strapping machines in different positions. Signode Steel Strapping Co. (F-26)

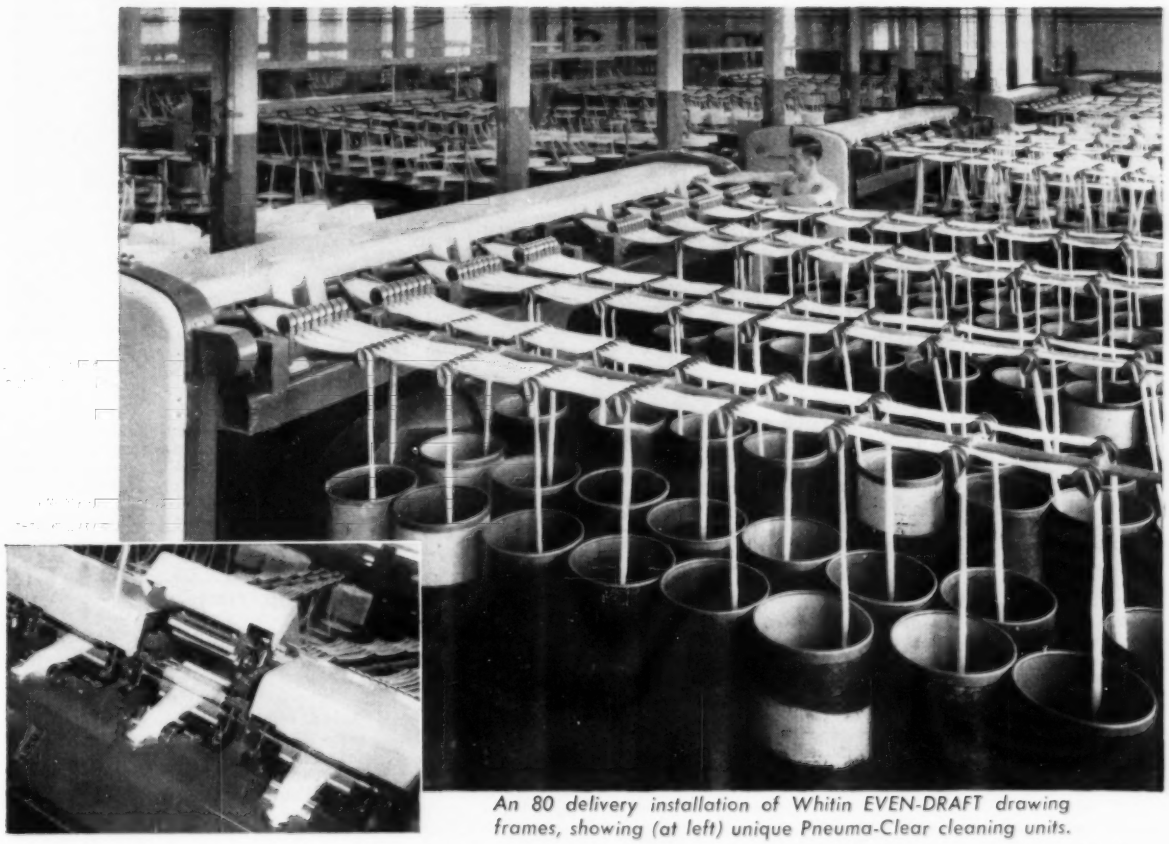
Industrial wheels—For use in casters or independently on hand trucks and dollies described in bulletin from Faultless Caster Corp. (F-27)

Corrugated steel sheets—With wider purlin spacing for heavier loads de-

← Circle A-60 on Reader Service Card

WHITIN EVEN-DRAFT* DRAWING

the first, and only, practical High-Speed Drawing Frame



An 80 delivery installation of Whitin EVEN-DRAFT drawing frames, showing (at left) unique Pneuma-Clear cleaning units.

Enthusiastic statements from scores of mills conclusively prove that Whitin EVEN-DRAFT drawing frames consistently outperform all others — positive evidence that they can truthfully be called the first practical, and successful, high-speed drawing frames. Users report up to triple production, sliver more even than ever before produced, costs reduced by as much as 50% and many other benefits in subsequent processing which result in better yarns and higher quality fabrics.

Outstanding among the many advantages which distinguish the Whitin EVEN-DRAFT drawing frame are:

- **Runs up to 400 feet per minute — on all fibers up to 3" — depending upon mill conditions and production needs**
- **Cleanliness — Clearer waste and fly efficiently removed by Pneuma-Clear units on each delivery — an indispensable essential to satisfactory operation — available only on WHITIN EVEN-DRAFT**
- **Four over Five drafting units — no rolls to remove or replace, simple to set**
- **Superb sliver quality — Variations: carded 12-16%; combed, 10-14%; synthetics, 10-14%**
- **Advanced design — Two independent four-delivery heads, heavy vibration-proof precision construction, overarm weighting, electronic stop motions and signal lights; 14" — 15" — 16" cans, 36" or 42" high**

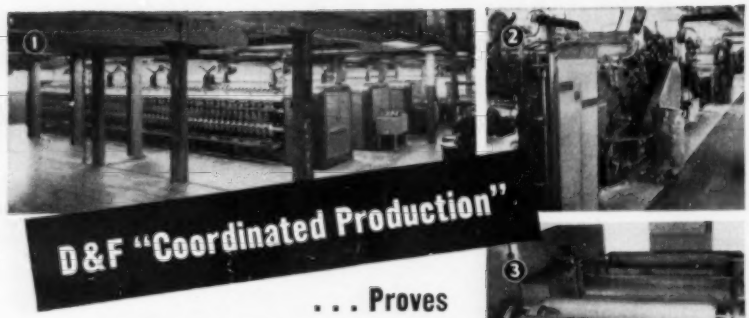
For complete information, ask your Whitin representative — or write direct to us.

*TRADE MARK

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



D&F "Coordinated Production"

. . . Proves Profitable for Packard Mills

At Packard Mills in Webster, Massachusetts, where quality rates high, Packard men have learned over the years to count on D&F "Coordinated Production" machinery to make every possible phase of production profitable.

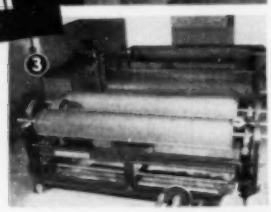
In producing fine cloth, each of these D&F products plays an important part: (1) D&F Spinning Frames, (2) D&F cards, (3) D&F Traverse Grinders, (4) D&F Nappers, (5) D&F Pickers, (6) D&F Dressing Equipment, (7) D&F Dusters, D&F Spare Parts, D&F Supplies of Condenser Tapes & Aprons and Card Clothing. Each contributes to high quality, production and efficiency — when properly specified and used. The Advice, Counsel, and Service of D&F Technicians help to fulfill these conditions.

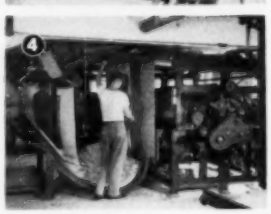
This is the D&F "Coordinated Production" Package Plan for textile mills. Mills following this plan can always rely on Davis & Furber (as the one overall source of supply) to help solve mill production problems.

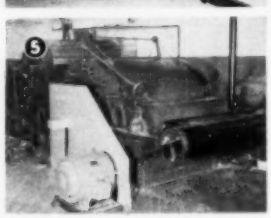
New mills being planned, or existing mills considering expansion, are taking advantage of the D&F "Coordinated Production" Package Plan. You are invited to investigate it in whole or in part. There is no obligation.

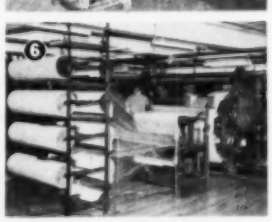
Begin with a request for a D&F "Coordinated Production" in-the-mill survey. The confidential study and analysis that results often produces recommendations which can tie D&F right into your production requirements. At the same time, D&F will recommend any accessories, spare parts or supplies that may be needed.

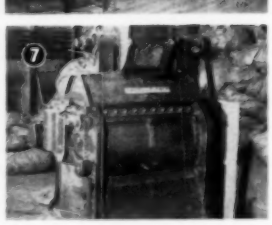
For *new-plant quality and yield*, for modernization of existing equipment, for properly specified accessories and supplies, for production that can deliver profits — call on Davis & Furber, North Andover, or Charlotte.





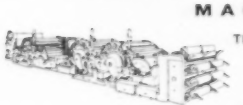






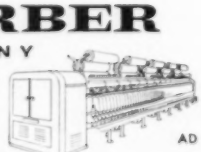
DAVIS & FURBER

MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS

North Andover, Mass.
Charlotte, North Carolina



AD 12-5

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MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

NEW LITERATURE Continued

scribed in technical bulletin from Armco Steel Corp. (F-28)

Roller-chain drives — Catalog illustrates and gives prices and data on new line of drives and sprockets. Maurey Mfg. Corp. (F-29)

Welding-pad gauges—Data sheet gives construction details on liquid-level gauges that can be welded to metal containers. Jerguson Gage & Valve Co. (F-30)

Reroofing—Vulca-Dek system that cuts reroofing costs 55% described in brochure from Monroe Co., Inc. (F-31)

Check valves—Booklet with pictures and description of 40 bronze and iron check valves from Fairbanks Co. (F-32)

Gravity conveyor—A 16-p. booklet dealing with conveyor applications is available from Rapids-Standard Co., Inc. (F-33)

Speed reducers—Engineering manual discusses selection and application of shaft-mounted speed reducers. Westinghouse Electric Corp. (F-34)

Fuel-oil catalyst—An additive that holds oil, water, and sludge in complete suspension and increases rate of combustion is described in leaflet from KOR Corp. (F-35)

Shop tools—Listed and indexed in catalog from Montgomery & Co., Inc. (F-36)

Speed reducers—Supplement to Bulletin 2651 contains data and mounting information relative to new line of quadruple speed reducers. Link-Belt Co. (F-37)

Cutting and grinding—New quarterly publication, "Cutting Trends," containing articles of interest to machine-shop men, is now being published by Simonds Worden White Co. (F-38)

Vibration control—Booklet tells how to anchor textile machinery with Unisorb material. Felters Co. (F-39)

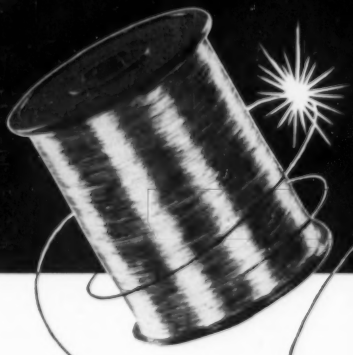
Cold-finished bars—Revised bulletin acts as guide to selection and specification of carbon-steel bars. Joseph T. Ryerson & Son, Inc. (F-40)

Steel repair kit—Bulletin describes "plastic steel" emergency repair material for use in plumbing and heating systems. Devon Corp. (F-41)

Maintenance management — Booklet tells how to organize and operate maintenance programs and use personnel to best advantage. Remington Rand Div., Sperry Rand Corp. (F-42)

Cutting torches—Folder describes Oxweld flame-cutting equipment for jobs from thinnest sheet metal to risers 10 ft. thick. Linde Co Div. of Union Carbide Corp. (F-43)

for
Upholstery
and
Drapery Fabrics



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FAIRTEX®
metallic
YARNS

LUSTRE THAT LIVES
. . . for the Life of the Fabric!

Add the luxury look to your fabrics with the glitter of Fairtex with Foil or Metallized Mylar* or Fairtex Butyrate Metallic Yarns.

Choose from the wide range of style-wise Fairtex colors . . . all are manufactured to meet your customers' requirements. Fairtex metallic yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

These smooth, pliable and uniform yarns do not flake or break . . . work easily in weaving or knitting.

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*Dupont's TM for polyester film

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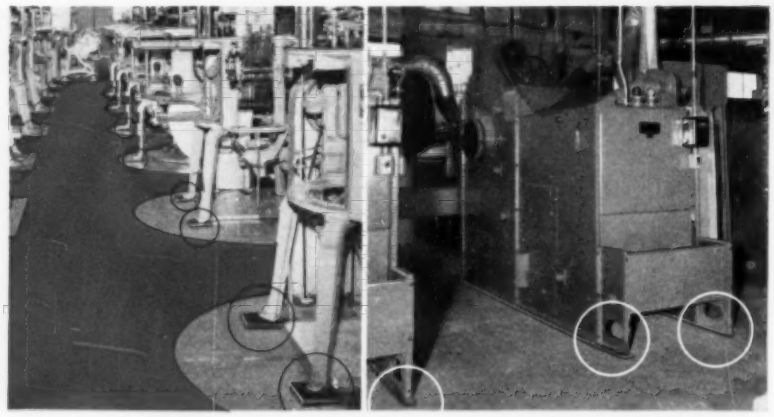
3701 N. BROAD STREET
CHICAGO: WILLIAM NAPIER, 3555 PETERSON AVENUE
ATLANTA: ROBINSON TEXTILE CO., 3133 MAPLE DRIVE, N. E.

3030

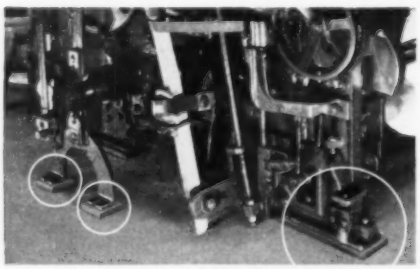
For more data, circle A-63 on Reader Service Card

Leading Textile Mills Report...

UNISORB Cuts Costs Reduces Noise and Vibration



Unisorb pads are used under all types of equipment to save installation time, eliminate lagging and bolting and reduce noise and vibration. Preparatory equipment, Circular Knitting Machines and Looms, as shown here, typify Unisorb installations. Unisorb is the only flexible mount available in variety of grades to suit "vibration personality" of each machine.



Unisorb pads save up to 75% in installation time — just apply cement to pad and set in place. **No danger of "walking"** and machines can be moved any time. Every mill can be made quieter and more efficient.

Make Sure All Your Machines Are On Unisorb! Send for Sample and Free Book — or contact your nearest Unisorb Distributor . . .

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Please send me a Unisorb Sample and Free Book.

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Name.....
Address.....
City.....Zone.....State.....

FEB-31

NEW LITERATURE Continued

GENERAL

Apparel outlook—A special report for 1958 is available from Credit Clearing House, Dun & Bradstreet, Inc. (F-44)

Packaging yarn—In corrugated boxes at Industrial Rayon Corp. is described in booklet from Hinde & Dauch Div., West Virginia Pulp & Paper Co. (F-45)

Packaging—The 18th edition of its 48-p. catalog on packaging methods is available from Signode Steel Strapping Co. (F-46)

Merchandising—Folder describes how merchandising methods can be improved by using special boxes and display stands. Gaylord Container Div., Crown Zellerbach Corp. (F-47)

Financing and factoring—Are discussed in a special report from Foundation for Management Research. (F-48)

Case marking and coding—Bulletin describes the Rolacoder friction-type case-marking and coding attachment. Adolph Gottscho, Inc. (F-49)

Gravity conveyor—Bulletin on Rapid-Roller gravity conveyor tells how to select conveyors and explains construction features. The Rapids-Standard Co., Inc. (F-50)

POINTERS FOR SUPERVISORS

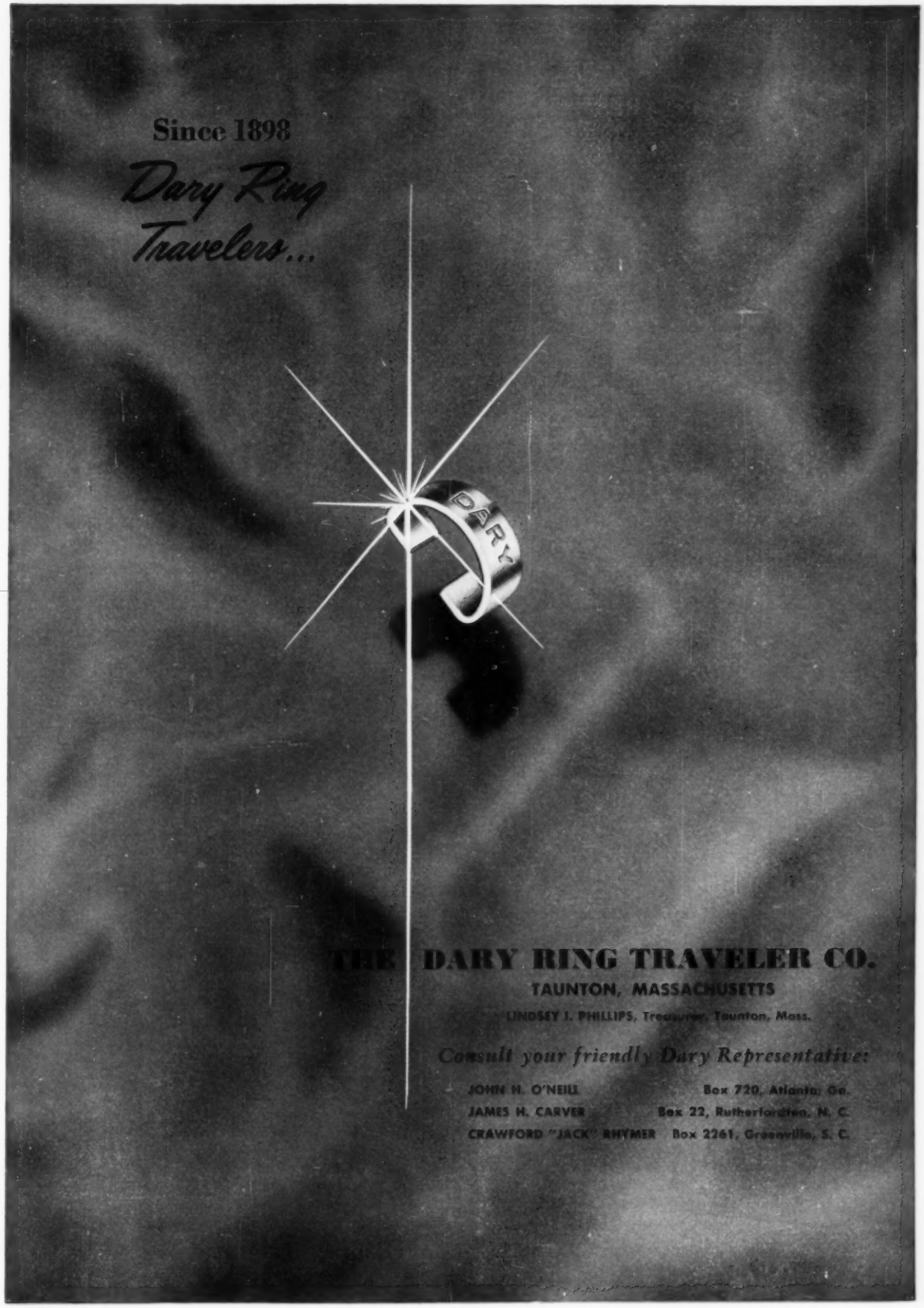
CONTINUED FROM PAGE 91

ization they will accept better jobs elsewhere within a few years, and then the whole procedure of placement and training will have to be repeated.

Fourth, without ever being an actual production worker on the various jobs in the department, some second hands can't visualize many of the problems that arise. They don't have the necessary patience and experience to help the workers with their day-to-day problems.

Fifth, sometimes a feeling of animosity will develop between the second hand and the employees. The second hand will build up resentment if he does not respect the experience and judgment of others or implies that his higher education denotes superior intelligence.

Hiring a second hand who has gained his supervisory experience in another mill is sometimes desirable. However, few such qualified men are available. When such a second hand is hired, much of the training and breaking in is eliminated. Often he will bring new ideas and methods,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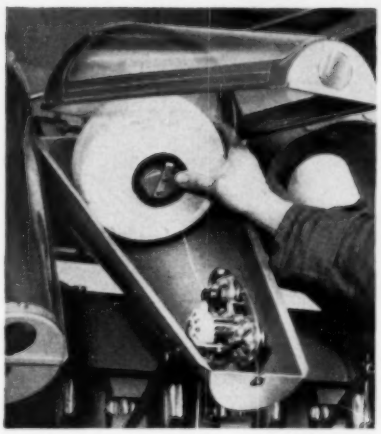
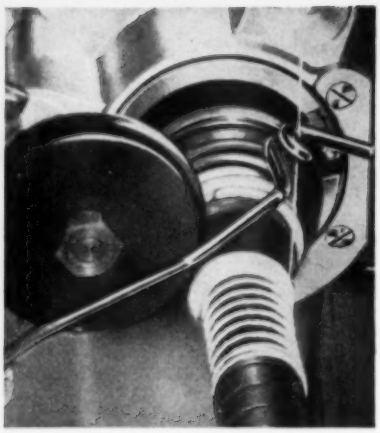
SCHWEITER

Suction hood takes all normal cross wound bobbins, also cheeses ▶

ROTOR device for tailless bobbins reduces labor when filling loom batteries ▶▶

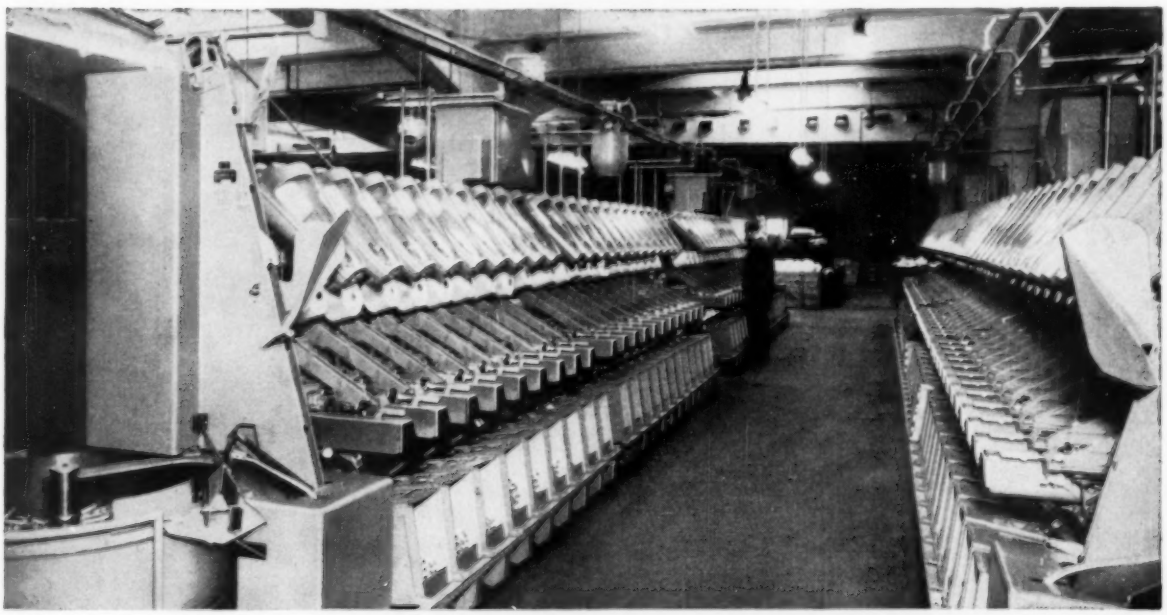




SUPER-AUTOMATIC BOBBIN WINDER type MSL

This is one of the most efficient, most versatile machines in the automatic bobbin winder field

- **Automatic feeding device for empty bobbins**
- **Individual apparatuses** • **Automatic suction dust remover**
- **ROTOR device for tailless bobbins** • **Spindle speed 10,000 r.p.m.**
- **Bobbin packing device PACKER, for transporting bobbins directly to the loom**



SCHWEITER LTD.

HORGEN (Zurich) Switzerland

Manufactured by **WHITIN MACHINE WORKS**, *Whitinsville, Mass. (U. S. A.) for sale in U. S. A. and Canada*
Manufactured by **SCHWEITER** *for sale in other countries*

#1 of a series. . . . . .

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TEXTURED YARN SEMINAR

TEXTURED FILAMENT YARNS VS SPUN YARNS

Are you considering the use of textured filament yarns? Good! You'll be pleased with the results if you keep this important fact in mind:

FACT: Textured Filament Yarns And Spun Yarns Are Not The Same

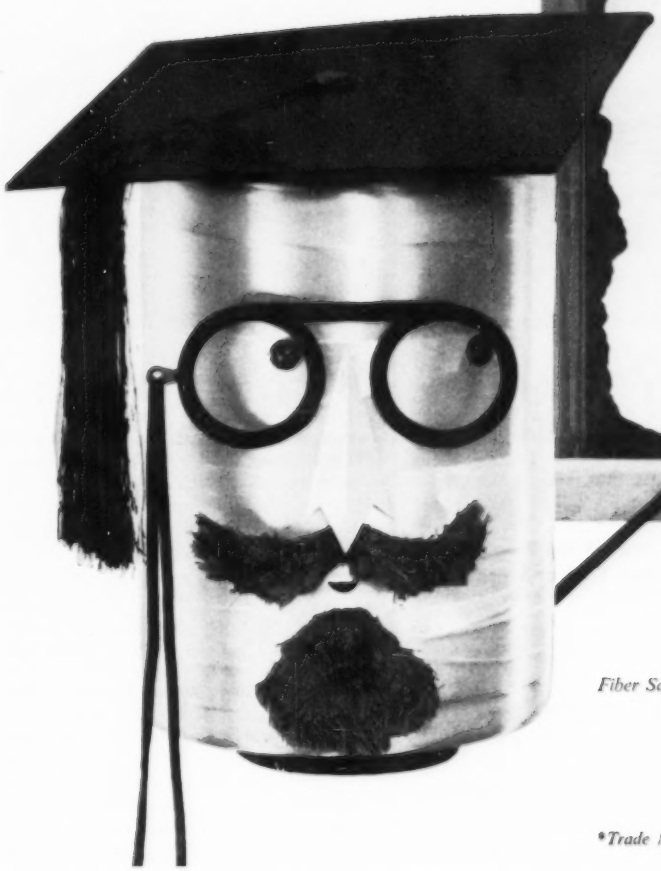
You see, textured filament yarns are precision yarns. Creeling methods, tensioning devices, tensions, guides, yarn carriers, cutting edges, dyeing and finishing are critical areas which must be given special attention for maximum success. The reason is simple:

Products made from textured filament yarns are dramatically different;

Textured filament yarns are different;

Therefore, different methods of handling textured filament yarns are required.

You'll find the adjustments necessary for handling textured filament yarns simple—the results unbelievably rewarding. So why not let us get you off to a good start in the use of Textured Caprolan* in your product lines? Our technical service, end-use development and fiber application staffs are available to help you . . . any time.



Fiber Sales and Service Allied Chemical *National Aniline Division*
261 Madison Avenue, New York 16, N. Y.

**Trade Mark—Allied Chemical's polyamide fiber*

many of which may not be practical on the new job; but he will stimulate some creative thinking on the part of established personnel.

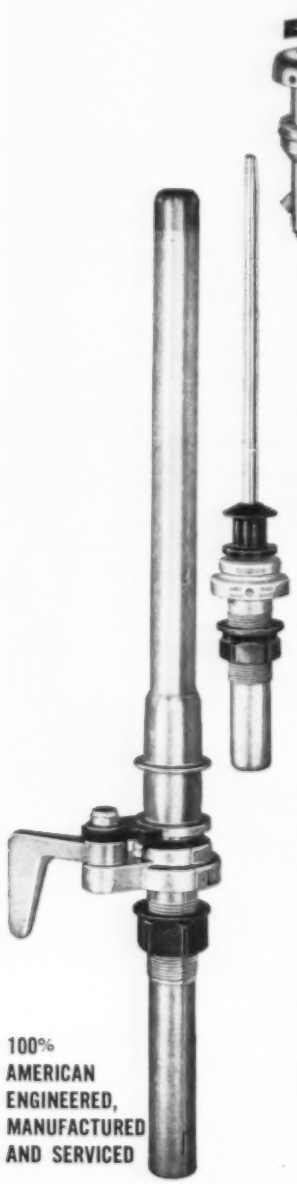
He Needs Leadership Qualities

Sometimes a good second hand goes job hunting simply because he doesn't like his present boss or company, or he may be upset because he didn't get the job or shift he wanted. Often a man will be perfectly satisfied with his job, but his family will influence him for one reason or another and he will seek a change.

But too often an available experienced second hand has some fault that has forced him to look for another job. Sooner or later this fault will show up on the new job. Most men old enough to be supervisors are already too old to change either their personalities or their habits.

Whether the prospective second hand is already on the payroll, working elsewhere, or finishing school, the selection should be done on an individual basis. If he has the inherent qualities of leadership, the other requirements can be attained. No amount of experience or education can fit a man to a supervisory job if he lacks the personality and character to inspire and lead others.

Some of these leadership qualities can be learned through practice. Very often it is not known, even by the individual himself, just what his performance and reactions on a second hand's job will be until he is put to the test. Some of the most promising candidates for supervisory jobs make the biggest failures; and some of the best supervisors are men who were placed on the job in an emergency simply because no one else was available.



Complementing each other

HARTFORD

● Autolatching Bobbin Hanger accommodates from 8 x 4 to 12 x 7

HARTFORD

● Improved Top Drive Filling Spindle with 25/32" whorl for higher speed — more pounds of yarn. Acorn eliminated to increase cleaning time cycle.

HARTFORD

● Ball Bearing Warp Spindles— for Paper Tube or Wood Bobbin

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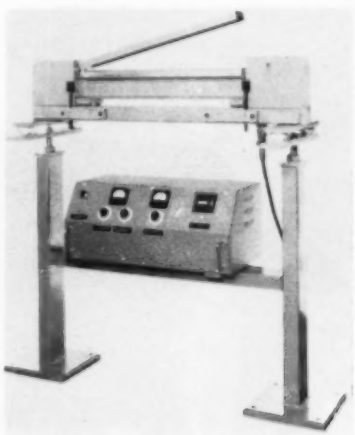
EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 128

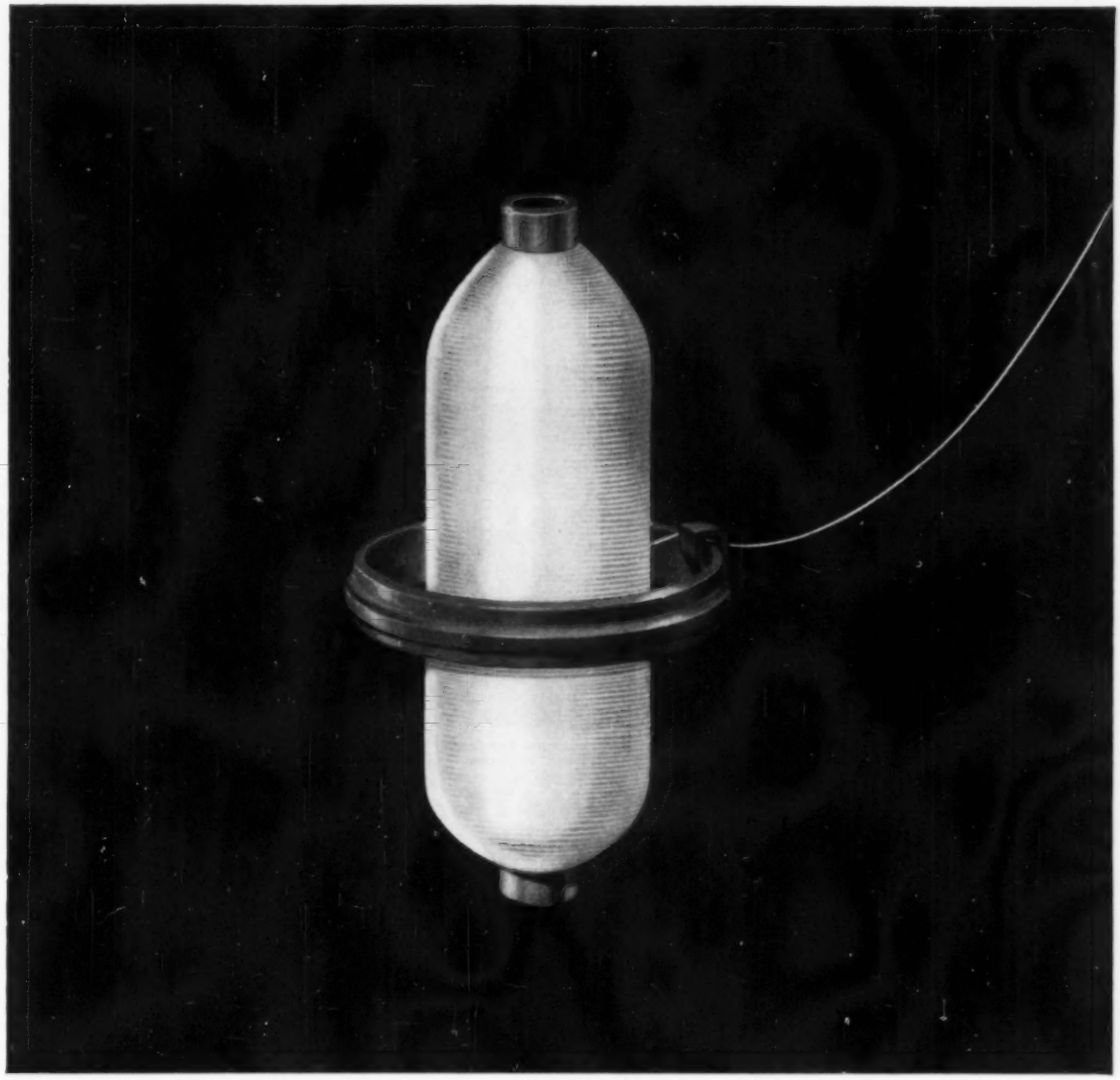


Warp-Yarn Monitors

The warp-yarn monitors announced by Fabrionics, Box 521, Huntington, L. I., N. Y., are photoelectric devices placed at the rear of the warper. The unit condenses the yarn into a flat sheet as it is passed through a light beam.

An objectionable defect, such as a single broken filament, causes the device to stop the warper, count the defect, or do both jobs. Defects can be counted above a predetermined size on the dual-purpose monitor. The warper can also be stopped at a second predetermined size for defects that should be removed.

A linear discriminator monitor can differentiate linear yarn-defect changes and the change in diameter of a defect. For spun yarns where knots and slubs



reduce wear, lengthen life of spindle bearings

Spinesso is a premium-grade lubricating oil for both spinning and twister spindle bearings. Its exceptionally high oxidation stability affords maximum bearing protection – and extends the time between lubrications considerably. Spinesso's high resistance to oxidation inhibits the formation of dark, sludge-like deposits that cause friction in the bolster – and stain yarn.

Spinesso is specially processed to provide an extra measure of protection against wear and to materially reduce rusting and pitting. Thus the problems most frequently encountered in high-speed bearing operations in humid textile mill atmospheres are minimized. Spinesso gives positive protection at all times – even at start-up when immediate and effective lubrication is essential.

Textile mills that have switched to Spinesso report *cleaner, longer-lasting spindle bolsters and blades–with less frequent lubrication.*

Spinesso is available in *three* viscosity grades. Get the whole story on this fine product . . . contact your nearest Esso Standard Oil Co. Division Office: Boston; Pelham, N. Y.; Elizabeth, N. J.; Bala-Cynwyd, Pa.; Baltimore; Richmond; Charlotte; Memphis; New Orleans.

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SPINESSO–Reg. U.S. Pat. Off. **TODAY—OIL BILLS for your TOMORROW—OIL PROGRESS WEEK OCT. 12-18**

longer than knots are not objectionable, the unit permits discrimination of a linear change from the minimum size detected by the regular yarn inspector to a length of 3 or 4 ins.

Circle T-19 on Reader-Service Card

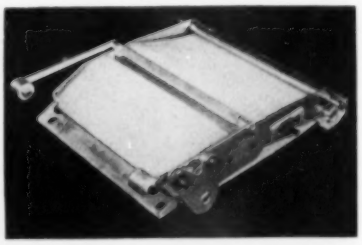
Jacquard Knitting Machine

The Overknit Jacquard Model II circular knitting machine announced by Mayer & Co., Tailfingen, Wurttemberg, Germany, has pattern drums so that colored and relief patterns can be produced without spiral. The machine has 24 feeds, up to 18 needles per inch, and a 30-in.-dia. cylinder. The production is 5 yds. per hr. for three-color jacquard to 20 yds. per hr. for plain fabrics, and the speed is 16 to 18 rpm.

Dial drive is through a spur gear, and the machine has a feed-wheel attachment. The dial cam system has two needle tracks and swing cams so that needles can knit tuck or welt and produce twill or double-twill backing.

Pattern drums are on all feeds, and they are small pattern pins 37 positions high and 24 ins. in circumference. The drums can be turned both ways or bluffed. The pattern area with two-color symmetrical patterns is 288 high and 72 wide.

Circle T-20 on Reader-Service Card



Drawing-Frame Underclearer

An automatic, self-cleaning underclearer for drawing frames that eliminates frequent hand picking has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

The underclearer has an endless felt cloth in constant contact with the bottom rolls and an oscillating stripping comb that collects waste on the bottom of the apron. The loose fiber mass is easily removed when the cans are doffed.

To reduce sliver variation, the change-over includes a new sliver pan that can be attached to the frame so that the distance from the nip of the back rolls to the pan remains the same regardless of changes in roll settings.

Circle T-21 on Reader-Service Card

Sponge-Rubber Clearer

A sponge-rubber clearer that eliminates hand-picking tools has been introduced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. The clearer, designed especially for Gwaltney frames, is particularly useful in mills spinning coarse carded stock and blends of man-made fiber.

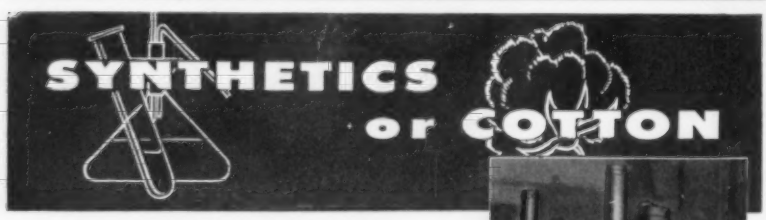
Circle T-22 on Reader-Service Card

Fleece Knitting Machine

Model 4/SMHO, a fleece machine with 48 feeds announced by Mellor Bromley & Co. Ltd., St. Saviours Road, Leicester, England, knits 16 courses of fleece per revolution. The machine is 18 cut with a 24-in.-dia. cylinder.

Yarn guides are screwed to a ring over the sinker-cam ring so they can be adjusted easily. A transparent cover keeps lint and dirt from accumulating on the sinker-cam ring.

There is a pattern wheel at the first



HIGHER PRODUCTION . . .
BETTER QUALITY . . .
MORE PROFIT . . .

LONG Pneumatic Lap Control System installed in Southern Mill.

WITH THE *LONG* PNEUMATIC LAP CONTROL SYSTEM*

√ **BIGGER LAPS . . .**

Laps of any practical size are now possible with the LONG Pneumatic Lap Control System . . . 88# Cotton . . . 77# Orlon . . . 92# Rayon laps are being produced by mills using these new control systems. (Names on request)

√ **BETTER QUALITY LAPS . . .**

Constant air pressure on lap pins insure even start-up and let-off, with consistent thicknesses plus an absolute minimum of waste at ends . . . faster doffing, too.

√ **LOWER MAINTENANCE . . .**

The *LONG* System eliminates up to 34 parts from pickers . . . maintenance is reduced to a minimum . . . System may point out other adjustments needed on pickers.

*Patent Pending

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Looking for Brand New Drawing? Ideal has it!

The New Drawing Frame is a brand new frame with valuable exclusive features. We think it is the best on the market. All we ask is the opportunity to discuss it and demonstrate it to you before you purchase any new drawing.

HIGH SPEED 400 feet a minute is the normal sustained operating speed of this new frame under actual mill operating conditions. Every part of this machine is built for safe, smooth, and continuous operation at this speed.

HIGH QUALITY SLIVER Ideal equipment has met the highest standards of strength and uniformity. Exclusive compensating rolls automatically even out thick and thin places in the sliver. Ideal's exclusive Vacuum System* eliminates slubs and gently sucks out dirt, trash and non-spinnable fibers.

LOW OPERATING COSTS The New Ideal Drawing Frame runs smoothly and quietly at high speeds with a minimum of adjustments and reconditioning. Every part is easily visible and accessible. Compact construction saves floor space. And the initial cost is right. The principles embodied in this frame have been proven on millions of pounds of sliver. Let's discuss this complete New Ideal Drawing Frame at your earliest convenience.

*Patent Applied for

Ideal Industries, Inc.
Bessemer City, N. C.

feed in each group of three feeds to select needles to receive the backing yarn. This yarn is tied in at the next feed where all needles receive the yarn. The third feed knits the jersey base.

Circle T-23 on Reader-Service Card

Plastic-Foam Pipe Covering

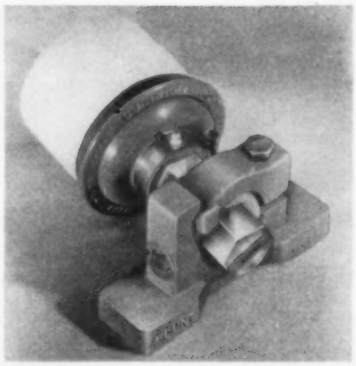
Flexible plastic foam for insulating hot and cold pipes is being marketed by Armstrong Cork Co., Bush House, Aldwych, London W.C. 2, England. The insulation is made to fit iron pipe and copper tubing from $\frac{3}{8}$ to $3\frac{1}{2}$ ins. in diameter.

The covering can be put on as sleeves, slit down the length, or wrapped around the pipe. Then it's sealed with a waterproof adhesive.

The material has a thermal conductivity of 0.28 Btus. at 75° F. mean temperature.

A $\frac{1}{2}$-in.-thick wall of the foam prevents condensation under normal indoor conditions at temperatures as low as 32° F. It will withstand temperature of 200° F.

Circle T-24 on Reader-Service Card



Improved Expander-Roll Seal

Expander rolls with end seals particularly adapted to operating under wet, steamy, or dusty conditions have been introduced by Mount Hope Machinery Co., 55 Fifth St., Taunton, Mass. The units have smooth contours and are supplied with an easily accessible grease fitting.

Circle T-25 on Reader-Service Card

V-Bed Knitting Machine

Model BJ V-bed knitting machine designed by Queens Machine Corp., Brooklyn, N. Y., has a 60-in. needle bed in all cuts from 4 to 12. Production is from 28 to 36 courses per minute.

High- and low-butt needles and full-jacquard control are used to produce complete garment sections, collars, cuffs, pockets, and narrow banding. Multicolored jacquard patterns can be made with birdseye backing.

Individual needle control is made with snapper springs plugged into steel cards. The cards are held together by easily released hinge joints to permit an entire set of cards to be removed and replaced with a fresh set.

All cam settings, racking, striping, and jacquard changes can be made with the carriage at either end of the machine. Six pattern chains control all changes.

Circle T-26 on Reader-Service Card

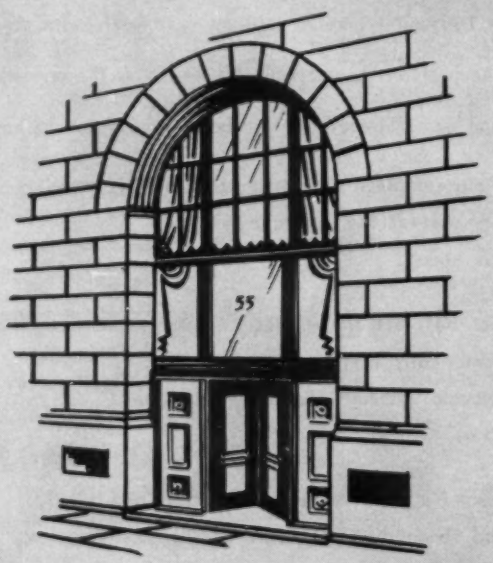
Automatic Stop for Roll Feed

Greater safety and convenience of operation are provided by an automatic-stop attachment for the continuous roll feeders marketed by Mount Hope Machinery Co., Taunton, Mass.

The mechanism uses a photoelectric eye to trigger the nip-roll brake so that as a roll runs out the end is not lost and may be sewed onto the next roll. Coasting is eliminated, and a jog but-

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



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Providing operational financing for the apparel, electronics, furniture, leather, plastics and textile industries.

Subsidiaries:

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BLANKETS, CARPET, APPAREL, INDUSTRIAL FABRICS—

You can go places with ACRILAN,® the acrylic fiber by Chemstrand, because ACRILAN has gone places—so successfully—in such a tremendous variety of end products. For example:

ACRILAN is responsible for a soft, lush blanket that machine-washes and machine-dries magnificently. The only blanket in its field to win the American Institute of Laundering Seal. A best-seller in its field to boot!

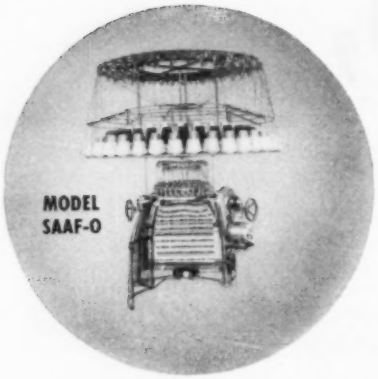
And ACRILAN® carpet made with Chemstrand's acrylic carpet fiber? You'll hear from all sides that it's the most notable promotable to hit the industry in an age! Reason: it's made from the most resilient fiber ever used in carpeting. And what a hypo this has given sales figures!

ACRILAN put the sales bounce back into jersey ... gave it a glorious fashion renaissance in women's apparel ... made it the men's shirting everyone was shouting for ... and a big deal in little girls' clothes—by making it automatic wash & wear.

What could ACRILAN possibly add to the soft hand of men's wear flannel, to the splendor of luxury woven fabrics? Washability, that's what! Washability turns out to be the magic word when it comes to making sales.

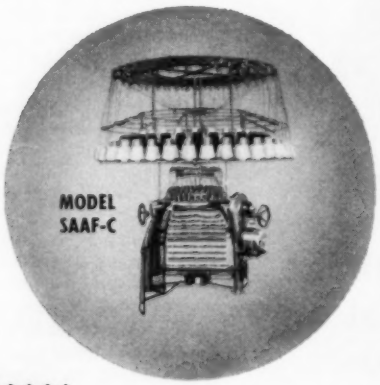
In deep pile throw rugs, on-the-job clothes, fender cloths, too— ACRILAN has made the grade with consumers by delivering the kind of performance values they demand. Consider the ways you can put ACRILAN to work in your mill. You'll congratulate yourself for doing it.

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1, N. Y. DISTRICT SALES OFFICES: 350 Fifth Ave., New York 1; 3½ Overwood Rd., Akron, Ohio; 197 First Ave., Needham Heights, Mass.; 129 West Trade St., Charlotte, N. C. Canadian Agency: Fawcett & Co., 34 High Park Blvd., Toronto, Canada • PLANTS: ACRILAN® ACRYLIC FIBER and ACRYLIC CARPET FIBER — Decatur, Ala.; CHEMSTRAND® NYLON — Pensacola, Fla.



These features make SUPREME

the latest word in modernized, low-cost knitting
of automatic, variable striped, patterned or solid jersey
with or *without* knit-on simulated rib trim
and draw thread section separators



HIGH SPEED PRODUCTION

Large number of feeds, rugged construction and stationary yarnstand give you vari-striped and patterned fabrics at unprecedented rates. Standard 26" machine has 32 four color striping boxes — 32 three position pattern wheels—32 automatic pattern placers.

TREMENDOUS VERSATILITY

Striping boxes, pattern wheels and placers on every feed let you pour out an infinite variety of striking, multi-colored fabrics — with pattern inserts twice the size previously possible. Knit a wide variety of fabric construction and textures with virtually any type of natural or synthetic yarn.

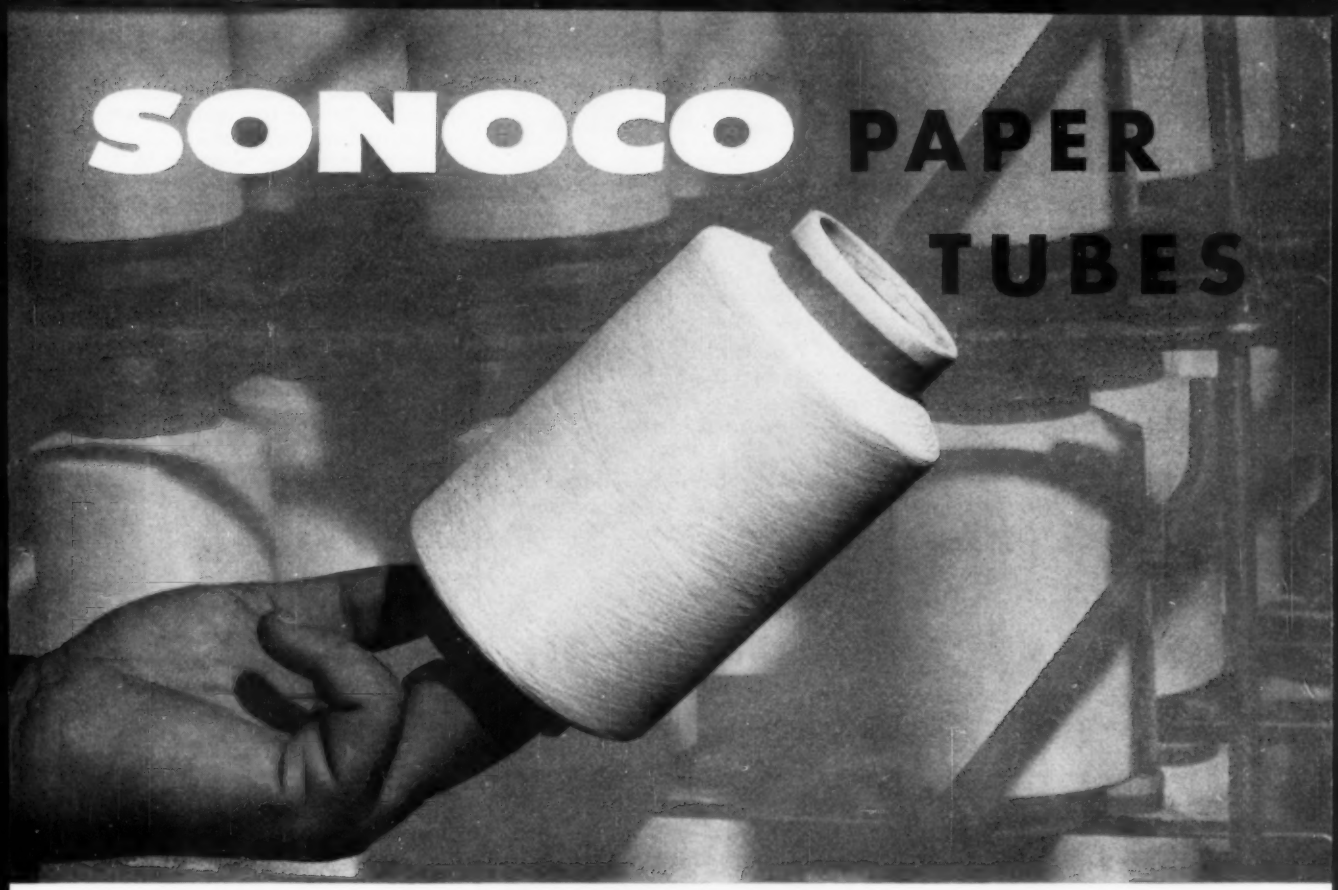
HIGH QUALITY AT LOW COST

Knitting efficiency and quality are insured by these ingenious new features—128 cone, "step-design" (Pat. Pend.) yarnstand, new knitting elements system, new striping box with easy, manual setting, new pattern placer with slideable studs for fingertip control and new, scissor-type, synchronized "no-waste" cutters.

SUPREME
KNITTING MACHINE CO., INC.
94-02 100th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
The Mallack Co., 711 S. Tryon St., Charlotte, N. C.

Ask For This FREE Booklet On
SUPREME'S NEW "PAY-AS-YOU-DEPRECIATE" FINANCING PLANS
The PAYD Plan

For more data, circle A-73 on Reader Service Card

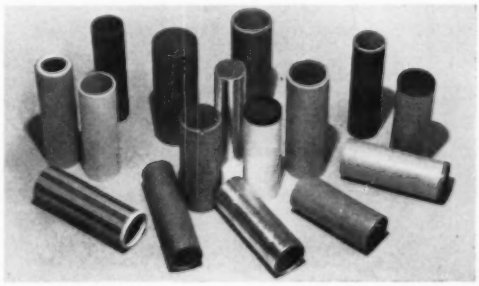


save money in the long run...!

The difference in cost between an ordinary paper tube and a Sonoco precision-made tube may appear as a minute saving, yet the superior performance characteristics that are built-in to all Sonoco tubes result in production economies which in the long run far exceed any small initial price differentials.

There are two reasons Sonoco paper tubes pay off. One, Sonoco paper tubes are engineered for the job using technical knowledge gained by more than 60 years' experience in producing textile paper carriers; and two, because Sonoco paper tubes are laboratory controlled for uniformity and quality throughout our completely integrated manufacturing operations from pulp to finished product.

If you agree that greater production efficiency will lower costs, try Sonoco job-engineered paper tubes. Our sales-engineers are available at your convenience.



SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—HARTSVILLE, S. C. • MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J. • LONGVIEW, TEXAS • PHILADELPHIA, PA. 1744 • LA PUENTE, CAL. • ATLANTA, GA. • GRANBY, QUEBEC • BRANTFORD, ONTARIO • MEXICO, D. F.

For more data, circle A-75 on Reader Service Card

GARDNER DENVER

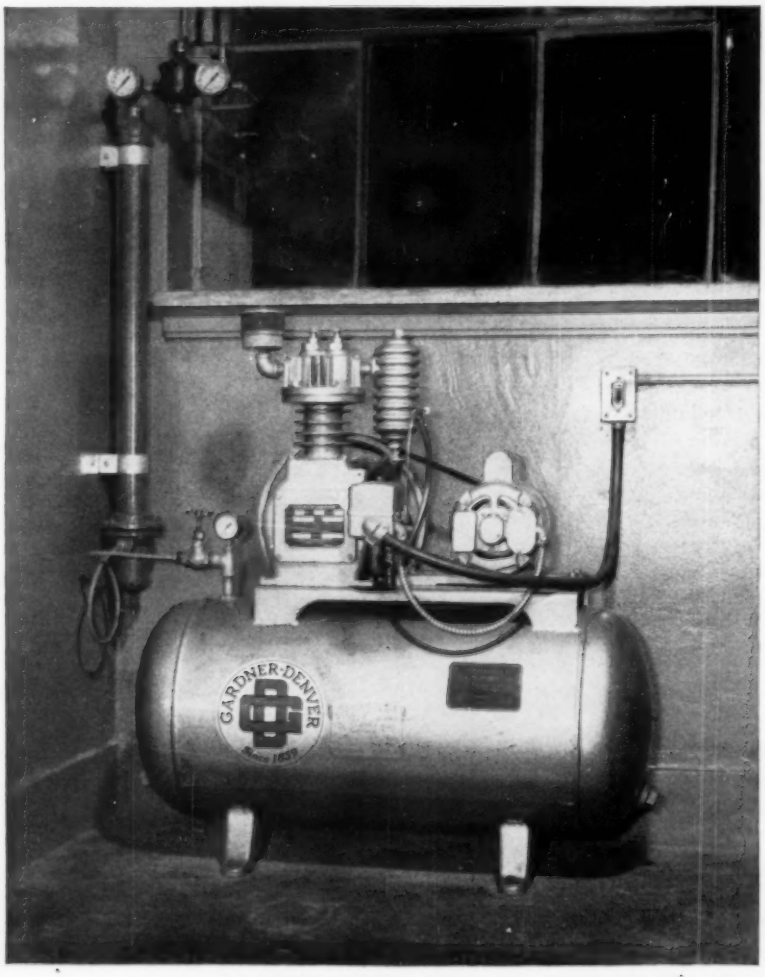
Hook up a small and compact Gardner-Denver CACB compressor and be sure of the pure, oil-free air you need for instrumentation, processing or the manufacture of chemicals.

The CACB uses no oil in the cylinder. Pistons and piston rings are made of self-lubricating carbon—no oil or water lubrication required. This highly efficient compressor supplies four to five cu. ft. of low-cost oil-free air per min., with discharge pressures from 40 to 100 psi. Write for complete information.

Stationary air compressors . . . tank-mounted compressor outfits . . . oil-free air compressors—whatever your compressed air needs, see your Gardner-Denver compressor specialist first. Gardner-Denver Company, Quincy, Illinois.

Low-cost . . . oil-free air

Compact CACB compressor



For more data, circle A-76 on Reader Service Card

ton is provided to enable the operator to run off the last few yards so that the new roll can be sewed on.

The nip rolls may be raised by a lever, and when they are in this position the driving motor is automatically disconnected, which makes for safe operation. A warning light tells the operator if nip-roll power is on.

Circle T-27 on Reader-Service Card

Automatic Strapping Machine

A fully automatic strapping machine announced by Acme Steel Co., 135th St. & Perry Ave., Chicago 27, Ill., applies strapping with uniform predetermined tension to a wide range of package sizes without an operator.

Sealed joints are made with spot welds, and therefore seals are eliminated. As a package moves into the machine on a short length of power conveyor, the size of the package is sensed and the proper strapping pattern is selected and actuated.

Circle T-28 on Reader-Service Card

Hosiery Pattern Drum

A quick-change pattern drum for Hemphill machines has been developed by Southern Mill Equipment Corp., 508 W. 5th St., Charlotte, N. C., to reduce the time spent in changing patterns.

The drum consists of over 1,900 jacks, each securely fixed in a separate honeycomb compartment. These jacks can be locked in an extended or withdrawn position.

To change patterns, a few jack locks are removed and all jacks can be pushed in or out of action with the finger tips. There are no disks to cut. The drum can be easily lifted from its post on the machine, and it fits on SCOP, SCP, wrap, and reverse-plait machines.

Circle T-29 on Reader-Service Card

Heavy-Duty Strapping Tool

A tensioning tool for heavy-duty steel strapping is being sold by Signode Steel Strapping Co., 2600 North Western Ave., Chicago 47, Ill. The tool saves strapping on each operation by eliminating the curl of strapping usually wasted.

An air motor does all the tensioning. There is no limit to the amount of strapping that can be taken up; so you don't need to know in advance how long the strap should be. A built-in strap cutter works with a very light touch. This model, FN-114,

weighs 20 lbs. and is used on 1¼-in. strapping for sheet packs, heavy skid or pallet loads, and large crates.

A dispenser is also furnished for feeding the strapping to the tool. It features easy pulling, little overrun of strapping, and feeding from several directions from a single position.

Circle T-30 on Reader-Service Card

Protected Open Motors

Open motors manufactured by Allis-Chalmers Mfg. Co., Box 512, Milwaukee 1, Wis., are now made with motor stators in an epoxy resin to completely protect the insulation system. The motors are made specifically for applications of excessive moisture or contaminated atmosphere. All integral horsepower frame sizes in which random-wound coils are used are available.

Circle T-31 on Reader-Service Card

Pipeline Strainers

A line of self-cleaning pipeline strainers in sizes from ¼ through 3 ins. has been developed by Sarco Co., Inc., 635 Madison Ave., New York, N. Y. Clearing by blowoff is facilitated by a 45° design. Each size is rated for saturated steam or liquids to 250 psi. and 475° F.

Features of the strainers are high-strength semisteel bodies, internal design that insures a tight fit without buckling, perforated heavy-gauge screen with spot-welded lap seams, and a built-in sediment chamber integral with the cap.

Circle T-32 on Reader-Service Card

Dual Element Controller

An all-electric-package control system for face and bypass unit regulators has been developed by Barber-Colman Co., Rockford, Ill. The unit control is for air conditioning, heating, and ventilating.

The dual element controller combines the function of thermostat and controller in a single prewired package. The control package is used with both hot water and chilled water.

Circle T-33 on Reader-Service Card

Drafting System

A drafting system that handles a wide variety of fibers and staple lengths (⅜ to 5 ins.) has been announced by Tweedales & Smalley Ltd., Lancashire, England.

The system is made with either two

Stop Lint Damage

the low-cost way

Save both time and material with lightweight, inexpensive, air-powered roll pickers. These handy tools easily reach into tough, tight corners, cracks and crevices. They collect damaging lint more efficiently than hand-picking methods . . . than hand-powered rotating tools.

Cost-cutting design features include: rotary-type air motor . . . cool running . . . instant start and stop . . . air exhausts out back of housing—won't blow lint into material being worked . . . built-in speed regulator . . . light weight—easy to manipulate. Contact your nearest Gardner-Denver office for a demonstration of economical Keller Tool roll pickers, or write for complete information.

ENGINEERING FORESIGHT—PROVED ON THE JOB
IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING

GARDNER DENVER

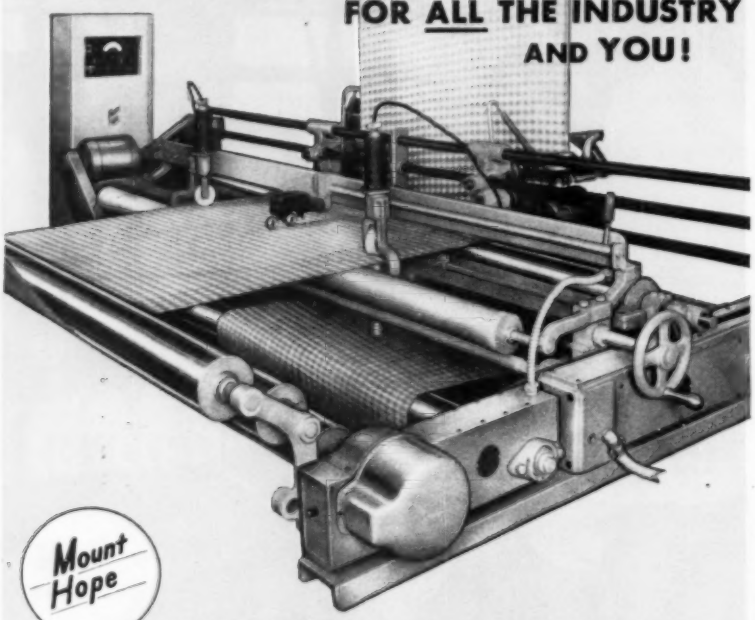
Gardner-Denver Company, Quincy, Illinois

BRANCH OFFICES: Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.

For more data, circle A-140 on Reader Service Card

Now! PROVED and READY!

FOR ALL THE INDUSTRY AND YOU!



Mount Hope

SKEW LINER

SOLVES EVERY SKEWED WEFT PROBLEM — Automatically

After successful on-the-job tests in many New England mills, the newest Mount Hope production-and-profit booster — the SKEW-Liner — is now available to textile mills everywhere, on an outright purchase basis, or through a special "Lease Plan."

This simple, rugged, dependable unit is the first practical *automatic* solution to the costly, skewed weft problem — and New England users report that it has "operated perfectly," with its reliable electro-mechanical detection system truly "automatic," easy to set, and virtually maintenance-free. As one mill man put it — "Looks like Mount Hope has done it again!"

SIMPLE CONTROL SETTING

SIMPLE DETECTION STEP #1 FEELER ROLLS

STEP #2 SENSING ROLLERS

SIMPLE CONTROL ACTION

INTERESTED? WANT FACTS & EARLY-DELIVERY ASSURANCE?

WRITE NOW for informative folder on the Mount Hope SKEW-Liner and information on our "Lease Plan."

Mount Hope

MOUNT HOPE MACHINE CO., INC.

50 FIFTH STREET • TAUNTON, MASS.

Plants at Taunton, Mass., and Charlotte, N. C.

or three lines of top and bottom rolls. Single or double aprons are available.

The three-roll, double-apron system with graduated draft has a total draft of 8 to 25 and a break draft of 1.07 to 1.11. With two-zone drafting, the total draft ranges from 26 to 60; break draft is up to 4. The two-roll system is limited to a draft of 8 to 25.

Featured is a top-roll weighting arm manufactured by Wurttembergische Spindelfabrik, G.m.b.H., Germany.

Circle T-34 on Reader-Service Card

Silicon Power Rectifier

A silicon rectifier, Type 329, for all power applications is available from Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa. The unit provides average forward currents up to 160 amps. per cell in single-phase circuits or 150 amps. per cell in three-phase circuits with maximum peak inverse ratings up to 500 v.

Advantages of the rectifier include: high-ambient operation with up to 190° C. junction temperature, long life, high efficiency, low regulation, rugged construction, and small size. For easy mounting in any position, each cell has a ¾-in. threaded stud.

Circle T-35 on Reader-Service Card

Bottom Apron

More durability and better fiber-handling characteristics have been built into a new bottom apron, called Accotex No. 7876, developed by Armstrong Cork Co., Lancaster, Pa. Specially compounded rubber on the outer surface has great resistance to ozone and flex cracking. Inner surface is made of an abrasion-resistant rubber that has extra conformability to the drive-roll knurling, which insures accurate tracking and full power transmission.

Circle T-36 on Reader-Service Card

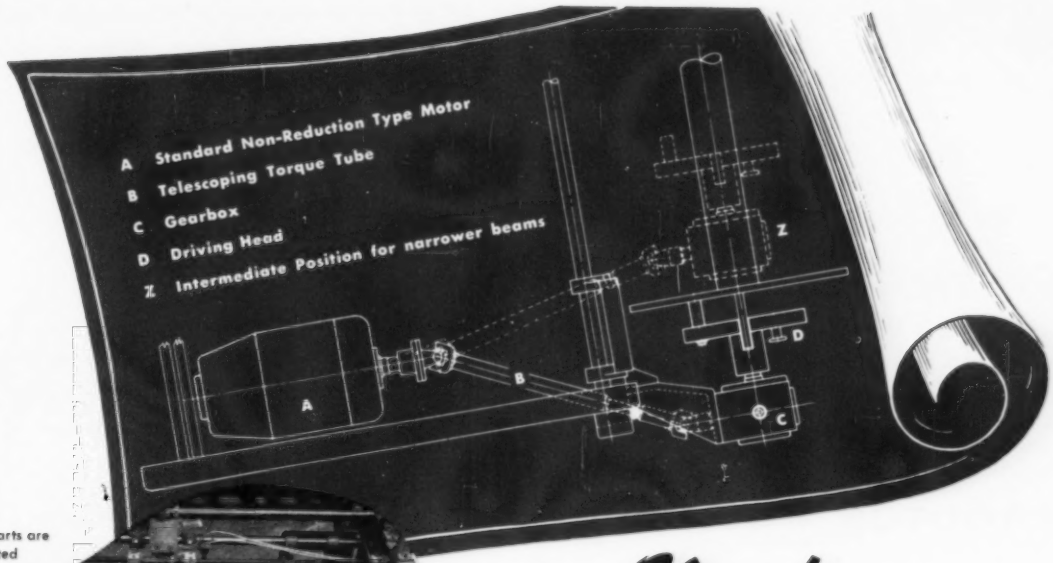
Force Control Switch

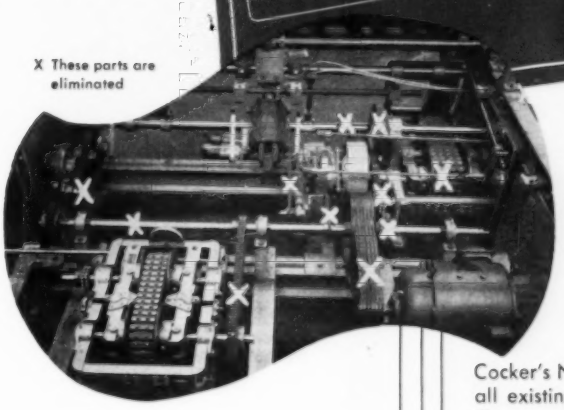
A force control switch is available from W. C. Dillon & Co., Inc., 14,620 Keswick St., Van Nuys, Calif. The switch is furnished with one to four adjustable Micro switches for automatic and accurate control of mechanical forces at various load points.

Circle T-37 on Reader-Service Card

Thermocouple Assemblies

A line of industrial thermocouple assemblies is available from Thermo





New!

The World's Finest Slasher Head Drive

Better Simpler Less Expensive

Cocker's New Slasher Gear Head Drive is a tremendous improvement over all existing drives. It eliminates troublesome belts, chains, and sprockets. These are replaced with a telescoping torque-tube drive* with two universal joints which transmits positive power to a gear reducer which drives the beam driving head direct. This is the same type drive which is used in the finest automobiles and on expensive machine tools.

LOWER INITIAL COST—LESS MAINTENANCE This new design permits the use of a basic 5 HP-DC motor of simplest design and eliminates the present expensive gear boxes, thus reducing initial cost materially. Simplified driving mechanism operates smoothly with very little maintenance. Only five places to lubricate. Working parts are easily accessible. The same drive will be used on all type Cocker Slashers, thus permitting "off-the-shelf" replacement parts service.

PROJECTION SPINDLES ELIMINATED Can safely run beams varying as much as 50 inches in width without protruding spindles and with no sprockets or chains to slide in and out.

VIRTUALLY ELIMINATES NOISE

NEW CLEAN MODERN DESIGN

All other features of the superb Cocker head end remain the same as before —rugged construction, complete and accurate push button controls, full instrumentation, new, fast and simple beam doffing. Also available with Cocker's patented Beam Drive which provides constant adjustable tension regardless of speed or load. Speeds up to 150 ypm and 20% to 25% more yarn per loom beam with production rates of over 1500 lbs. per hour.

Write for full information today.

*Patent Applied For

In Canada and New England: Contact W. S. Clark, Montreal Canada, Melrose 1-3751
Plant and Offices: Ranlo, N. C. Mailing Address: Gastonia, N. C.

THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

For immediate action on parts or service — nights, weekends or holidays — call EDison 5-5061, Charlotte, N. C.

The finest textiles

in the world

are processed with

PROCTOR EQUIPMENT

From the smallest mills to the largest plants . . . wherever fine quality textiles are processed, Proctor equipment is on the job.

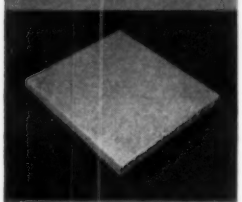
See for yourself how several textile products are served by many Proctor units—each precision engineered to assure high production with uniformity of product—plus profit-making economy.

A sampling of companies now using Proctor Textile Processing Equipment:

Allied Textile Printers, Inc.
Amerotron Corp.
Anglo Fabrics Co.
Joseph Bancroft & Sons Co.
Bigelow-Sanford Carpet Company
Burlington Industries, Inc.
Chatham Mfg. Co.
Cone Mills Corp.
Consolidated Bleaching Co.
Deering-Milliken & Co.
P. H. Hanes Knitting Co.
A. & M. Karagheusian
The Kendall Company
Jas. Lees & Sons Co.
Magee Carpet Co.
Mohasco Industries, Incorporated
Pellon, Inc.
Fairlawn Finishing Co.
Rock Hill Printing & Finishing Co.
Simmons Company
J. P. Stevens & Co., Inc.
United Merchants & Manufacturers, Inc.

All of these products are processed with Proctor Preparatory and Blending equipment in addition to the specialized machines listed below.

PRINT GOODS
- Loop ager
- Loop dryer—curer
- Tenter Housing
- Roller Curer

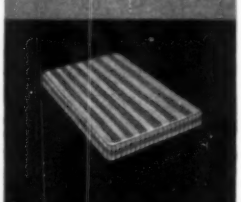


CARPETS
WOVEN AND TUFTED
- Carding
- Drying

KNIT GOODS
- Continuous Bleach Range
- Nylon Setting and Drying Equipment
- Loop dryer
- Redmanized® "shrunk-to-fit" finishing
- Electrocolorset for dyeing, setting, and finishing nylon hosiery

WOVEN SYNTHETICS
- Synthetic card
- Resin finishing ranges

BLANKETS
- Stock dryers
- Carding



MATTRESSES
- Completely automatic Batt Making System

NON-WOVENS
- Web forming equipment
- Drying and curing equipment

Write today for free, illustrated literature. Learn more about how Proctor equipment can serve you.

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PROCTOR & SCHWARTZ, INC. PHILADELPHIA 20, PA.
MANUFACTURERS OF TEXTILE PROCESSING MACHINERY AND INDUSTRIAL DRYING EQUIPMENT

For more data, circle A-79 on Reader Service Card

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WADDINGS · BLANKETS · BEDDING · CARPETING

Whatever your products, you can package for sales advantages with

THILCO "Brand Name" PROTECTIVE PAPERS

Overall decorated roll wrap

Decorated Waxsorb cone wrap

Decorated protective fabric wrap

Don't worry about protection. Thilco TEXTILE Wraps for any specific requirement give you the very best. *But that's not all by any means!* Thilco papers can be colorfully PRINT-DECORATED to give you all the benefits of "Brand Name" packaging at all merchandising levels. And, you can get all this with its many other sales values *for just a few cents more* than the cost of plain, unidentified wrappings! Thilco TEXTILE Wraps run the gamut from lightweight, special treated tissues and krafts to heavy-duty protective wraps for transport and storage.

COMBINE PROTECTION WITH IDENTITY FOR THESE IMPORTANT SALES ADVANTAGES:—

- Provide brand name identity through entire distribution sequence
- Help trade-up product's quality
- Add colorful eye and buy appeal
- Increase prestige value
- Stimulate repeat orders
- Reduce labeling and packaging costs
- Simplify inventory control
- Eliminate "look-alike" competition
- Provide low cost "traveling" advertising

FREE SAMPLE KIT
Contains all popular grades of Thilco Textile wraps—write today.

THILCO
Functional Papers
FOR TEXTILES

OFFICES
NEW YORK
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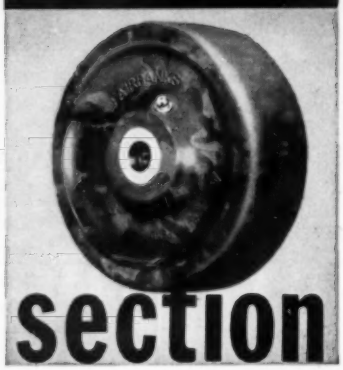
Now one wheel for any section of your plant

New Lamilon
NYLON-REINFORCED
ALL-PLASTIC WHEELS
(patent pending)



Now, for the first time, you can standardize on one wheel for all your materials handling equipment in any section of your plant. Regardless of the types of floors or floor conditions, Fairbanks new "LAMILON" Wheels will:

● **Protect your floors. "LAMILON" Wheels stay smooth and concentric, will not mar or mark, because of exceptionally high impact strength and abrasion resistance.**

● **Show no affect from oils and greases and a very high resistance to most chemicals. "LAMILON" Wheels have a water absorption factor almost as low as high quality rubber and will not deteriorate in wet floor conditions.**

● **Roll easier with alloy steel roller bearings, hardened steel outer race and provision for pressure lubrication. "LAMILON" Wheels roll easier than semi-steel wheels in most instances.**

● **Last longer and give more dependable service than any other plastic wheel.**

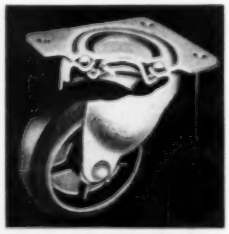
"LAMILON" Nylon-Reinforced All-Plastic Wheels are available in sizes 3 through 12 inches and can be furnished with thread-tight thread guards.

Fairbanks complete line of industrial caster and truck wheels includes the finest vulcanized rubber tired wheels (sizes 3"-18") on the market, solid rubber wheels (sizes 2"-6") and semi-steel wheels (sizes 2"-16").

FAIRBANKS "LOCKWELD" CASTERS WITHOUT KING-PIN

Easiest swiveling, longest lasting. Unique patented "LOCKWELD" construction eliminates king-pin, chief source of caster failure.

Illustration: Series "23" double ball race swivel casters, sizes 3"-8". Single ball race swivel casters, sizes 2"-6" and matching rigids available.



THE **Fairbanks** COMPANY

Executive Office — 393 Lafayette Street, New York 3, New York
Valves • Dart Unions • Casters • Trucks • Wheels
● 520 Atlantic Ave., Boston 10, Mass. ● 393 Lafayette Street, New York 3, New York ● 15 Stanwix St., Pittsburgh 22, Pa. ● 202 Division St., Rome, Ga. ● **Factories** — Rome, Georgia and Binghamton, N. Y.

Electric Co., Inc., Saddle Brook, N. J. There are eight different types of built-up and bar-stock thermowells and protection tubes to meet all temperature, environmental, and installation requirements.

Circle T-38 on Reader-Service Card

Hex Head Bolts

A complete line of hex head bolts, with or without hex nuts, is offered by Clark Bros. Bolt Co., Milldale, Conn.

Circle T-39 on Reader-Service Card

Floor Coating

A floor coating that resists strong acids, alkalis, and solvents is available from Pennsalt Chemicals Corp., Three Penn Center, Philadelphia 2, Pa.

Circle T-40 on Reader-Service Card

Fork Trucks

A line of electric-powered fork trucks in addition to its gas-powered trucks is offered by Clark Equipment Co., Battle Creek, Mich.

Circle T-41 on Reader-Service Card

Pallet Truck

A rider-type pallet truck with balanced action that equalizes loads on an uneven floor is announced by Automatic Transportation Co., 149 W. 87th St., Chicago 20, Ill.

Circle T-42 on Reader-Service Card

Forged Steel Casters

A line of forged steel casters with capacity rated to 6,000 lbs. per set of 4 is announced by Hamilton Caster & Mfg. Co., 1700 Dixie Highway, Hamilton, Ohio.

Circle T-43 on Reader-Service Card

Plastic Pump

A polyethylene pump for handling extremely corrosive fluids at temperatures up to 260° F. is announced by Vanton Pump & Equipment Co., Hillside, N. J.

Circle T-44 on Reader-Service Card

Gear Pump

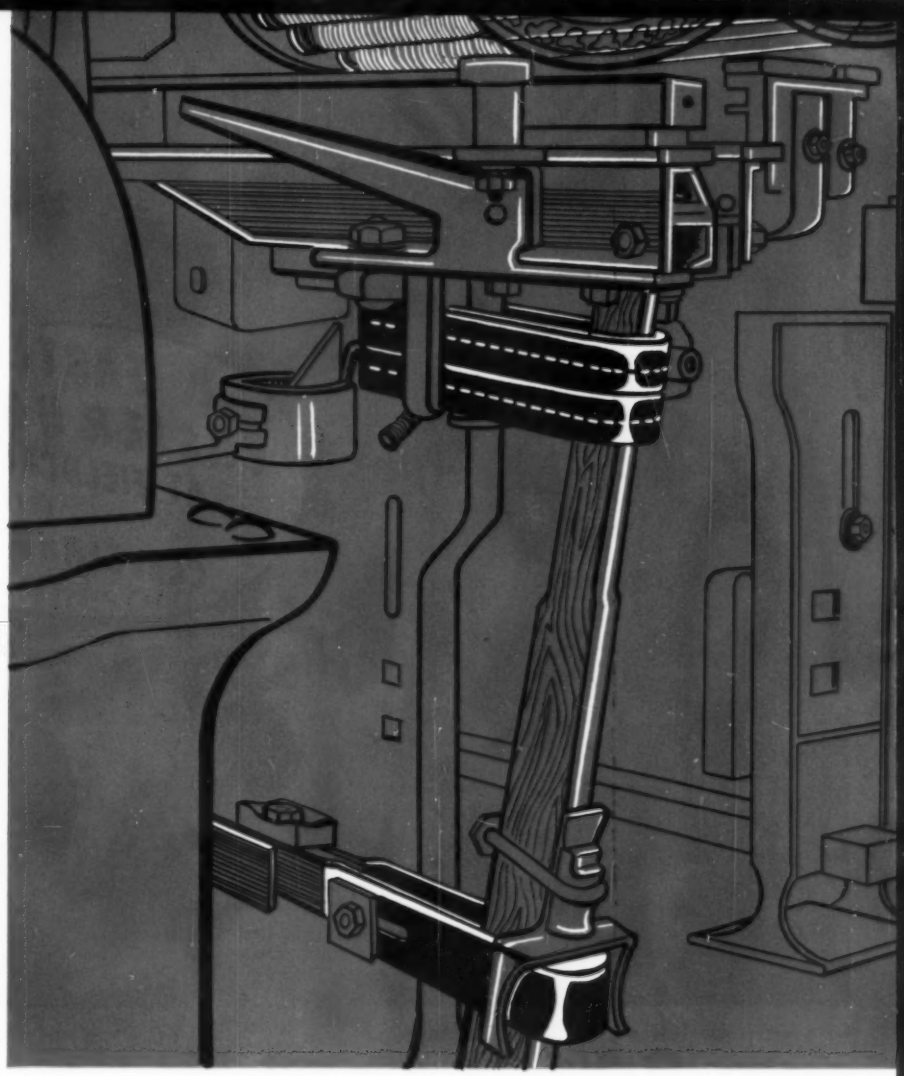
A low-volume, positive-displacement pump with hard-rubber casing and gears that will handle acids, alkalis, and other corrosions is available from

For more data, circle A-81 on Reader Service Card

For more data, circle A-82 on Reader Service Card →

Twin-Checks in Use at Greenwood Mills

Rhoads Twin-Check Straps are outperforming conventional endless checks at the Greenwood Plant of Greenwood Mills, Greenwood, S. C. Artist's drawing is based on actual photograph.



Rhoads Belting Engineered to Meet Your Requirements

In the Rhoads' family of beltings, there is a flat belt that is exactly right for your operating conditions.

It may be Tanastic, new leather-plastic belting with a stretch-free nylon core.

It may be Texalon, new all-synthetic belting of fabric and nylon . . . elastic and almost 100% stretch-free.

It may be Tannate leather belting, the product of more than 250 years of tanning experience.

Introducing TWIN-CHECK by Rhoads

Here's new improved performance, new economy for the weave room. Rhoads new Twin-Check Straps give better checking and boxing as they follow-through the arc of the picker stick. You get a smooth check with wear distributed evenly. Service life is increased. Rhoads Twin-Checks are pre-stretched — they require little or no adjustment. Made of Rhoads finest Tannate Leather in perfectly matched endless lengths.

When you get Twin-Checks by Rhoads, you buy more than 250 years of leather experience. Rhoads sales engineers know textile leathers — from checks and straps to the belting that powers your machines. For quotations or for literature, address: J. E. Rhoads & Sons, 2100 W. 11th Street, Wilmington 99, Delaware.

RHOADS

Since 1702 . . . Pioneers in Textile Leather

SAVES 80% of Beam Handling Time to Slashers

BECAUSE a tremendous amount of hauling is eliminated with a Cleveland Tramrail system at one of their mills, the executives of Fieldcrest Mills are enthusiastic over their overhead materials handling equipment in this mill.

Cleveland Tramrail is used in many departments. It has been found especially advantageous for the handling of beams. Since it is desirable to keep 70 to 80 warp beams ahead of the slashers, considerable space is required for their storage. Cleveland Tramrail enables them to store the beams three high when space is lacking and thereby get more beams into a given area. Also any beam can be picked up and moved direct to slashers without moving other beams on the floor.

It now takes about one-fifth the time formerly required to place beams into a slasher. It is much easier on the men, too! Possibility of strained backs is removed and safety is greatly improved.

Cleveland Tramrail is aiding dozens of textile mills accelerate production, cut costs and better working conditions.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

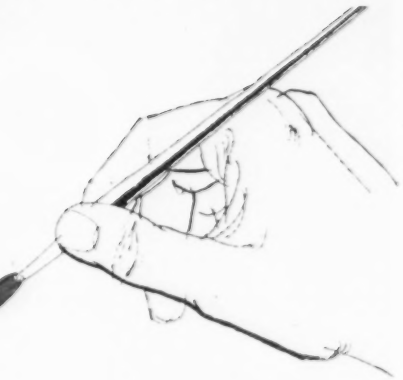
CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8466 E. 287 ST. • WICKLIFFE, OHIO

MORTON SYSTEM

DYEING MACHINES

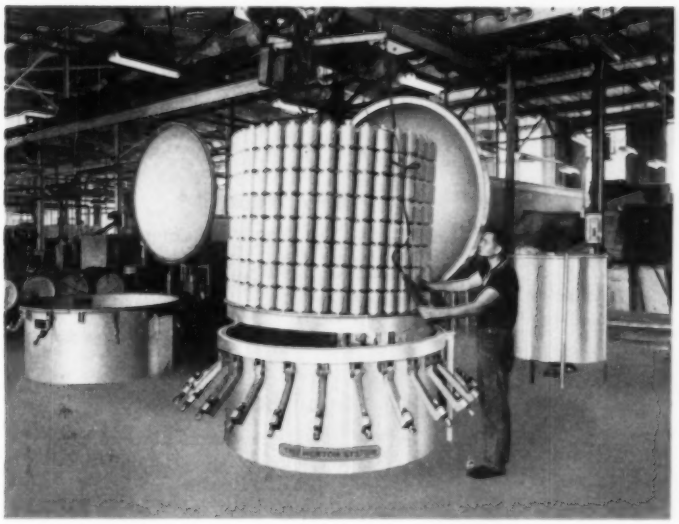
provides the

Finishing Touch



to the plant seeking

MODERNIZATION!
GREATER PROFITS!



Whatever modern equipment is used in manufacturing yarns or fabrics, *quality* cannot be obtained without *quality* workmanship and equipment in the dyeing, bleaching and finishing operations.

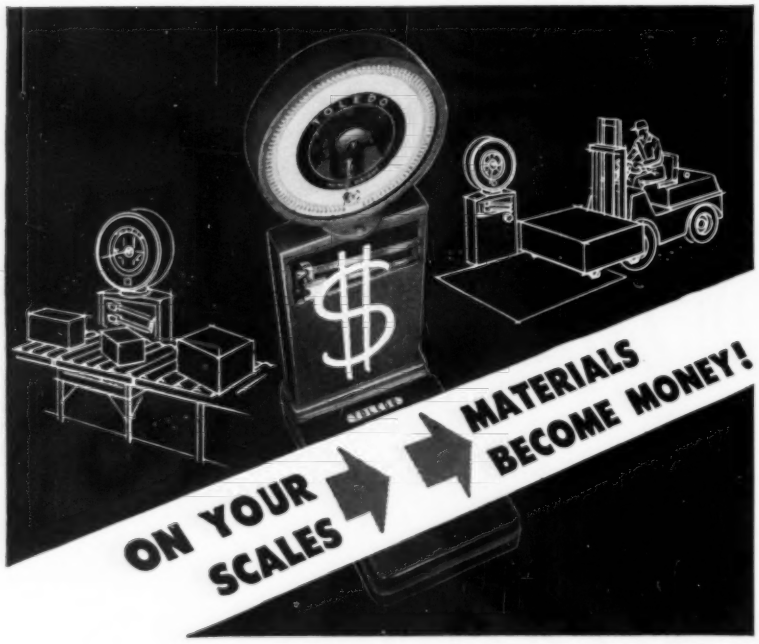
Production and labor costs can be reduced substantially by investing in a MORTON SYSTEM INSTALLATION.

MORTON

MACHINE WORKS, INC.
COLUMBUS, GEORGIA

Manufacturers of THE MORTON SYSTEM Machinery for Dyeing and Bleaching of
BEAMS • PACKAGES • STOCK PIECE TOPS • VALVES • PUMPS • BEAM AND PACKAGE EXTRACTORS AND DRYERS • DYE BEAMS, ALL MAKES AND DESIGNS DYE TUBES • DYE SPINDLES • TUBE SPACERS • CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS

For more data, circle A-84 on Reader Service Card

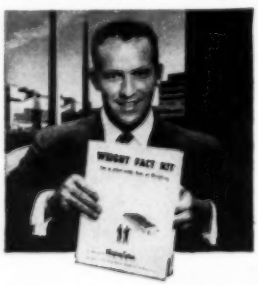


It will pay you to check now

on weighing efficiency in your plant!

For proper cost control, efficient weighing is a prime requirement. Weight records directly affect costs, quality, inventory control and customer billing. You can avoid weighing errors and inadequate weight data by placing the right scales in the right places . . . all properly integrated in a *plant-wide weighing system* to supply basic accounting records on materials received, transferred and shipped.

You can easily check up on the job your scales are now doing. Just ask for the exclusive Toledo Weight Fact Kit. A Toledoman will gladly explain how it will help you detect and correct weighing inefficiencies in your plant. REQUEST YOUR WEIGHT FACT KIT NOW. No obligation. Address Toledo Scale, 1409 Telegraph Rd., Toledo 12, Ohio.



TOLEDO SCALE
DIVISION OF TOLEDO SCALE CORPORATION

Headquarters for Weighing Systems

SERVICE
Factory-Trained
200 Cities

PORTABLE SCALE

FLOOR SCALE

SPEEDWEIGH

COTTON LAP SCALE

American Hard Rubber Co., Ace Rd., Butler, N. J.

Circle T-45 on Reader-Service Card

Neutral Valve

A lever-operated, ½-in., 1,000-psi., 4-way neutral valve is announced by Sinclair-Collins Valve Co., 454 Morgan Ave., Akron 11, Ohio.

Circle T-46 on Reader-Service Card

Gear Coupling

A versatile gear coupling that can take up to 1,800 in.-lbs. torque is produced by John Waldron Corp., New Brunswick, N. J.

Circle T-47 on Reader-Service Card

Chart Recorder

A six-channel chart recorder designed for high-precision instruments such as analog computers is announced by Mid-Century Instrumatic Corp., 611 Broadway, New York, N. Y.

Circle T-48 on Reader-Service Card

Nylon Coupling

A flexible coupling with a corrosion-resistant chain element made of nylon segments and stainless-steel pins is produced by Morse Chain Co., Ithaca, N. Y.

Circle T-49 on Reader-Service Card

Flow Meter

An improved line of flow meters for air, gases, and water is offered by Eclipse Fuel Engineering Co., Rockford, Ill.

Circle T-50 on Reader-Service Card

Small Boilers

Packaged automatic boilers in 15-, 20-, and 30-hp. sizes are offered by Orr & Sembower, Inc., Box 1138, Reading, Pa.

Circle T-51 on Reader-Service Card

Power Punch Press

The Model BT 12 press announced by Alva Allen Industries, 1001-15 N. 3rd St., Clinton, Mo., is designed to give long trouble-free performance.

Circle T-52 on Reader-Service Card

Power Turntable

An improved power turntable, avail-

For more data, circle A-85 on Reader Service Card

Adamstop means MODERNIZATION

The KEY to Greater Profits!

Alert Textile Men realize that it is essential to modernize their facilities NOW to take full advantage of the current upturn in textiles and reap GREATER PROFITS IN 1959!

ROVING FRAME OPERATORS CAN SUPERVISE UP TO 25% to 100% ADDITIONAL SPINDLES WITH ADAMSTOP... THE PROFIT-MAKING WIZARD.

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of Canada, Ltd.
Granby, Quebec

Georgia—Alabama Agent
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184 Heaton Park Drive
Decatur, Ga.

New England Agent
Cotton-McCauley & Company
P.O. Box 501
Pawtucket, Rhode Island

OR
Telephone: CEdar 3-8381

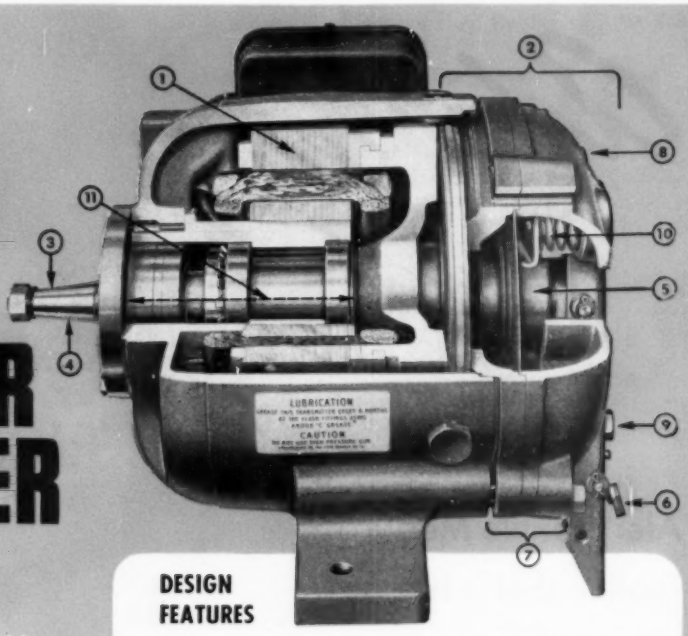
ADAMS, INC. 209 East Stone Ave., Greenville, S. C.

For more data, circle A-86 on Reader Service Card

THE DEPENDABLE DIEHL

"BA" POWER TRANSMITTER

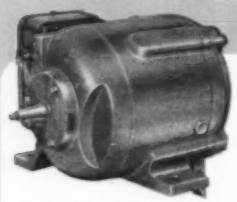
For Draper Looms



Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!

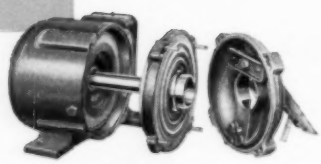
DESIGN FEATURES

*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

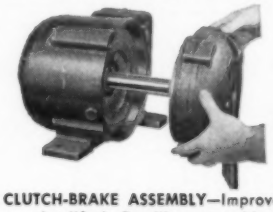


STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)



CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

The original and only loom power transmitter . . . plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

plus these outstanding Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

** Exclusive feature—patent protected.*

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Electrical Division of THE SINGER MANUFACTURING COMPANY

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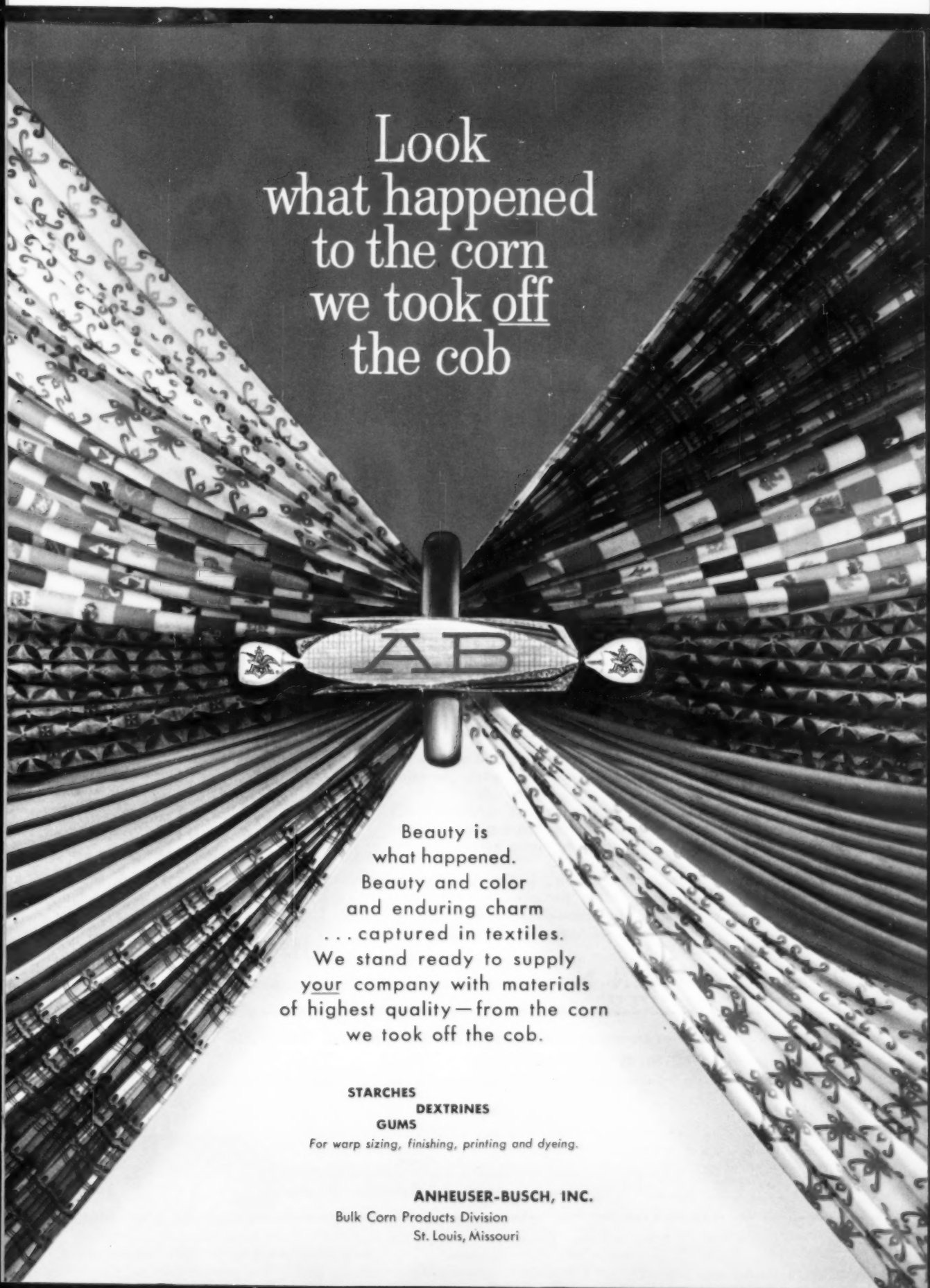
Look
what happened
to the corn
we took off
the cob
AB
Beauty is
what happened.
Beauty and color
and enduring charm
. . . captured in textiles.
We stand ready to supply
your company with materials
of highest quality — from the corn
we took off the cob.
STARCHES
DEXTRINES
GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Bulk Corn Products Division
St. Louis, Missouri

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For more data, circle A-88 on Reader Service Card →

100% FINANCING

for your new plant

Hello...

I'm Charlie Fife . . . of course every plant must have 100% financing of some kind; but, I'm sure you'll agree that this unique plan can solve a lot of problems, providing others, equally important, can be worked out as well.

Labor supply, for example. We have communities with excellent labor pools, both male and female, on which new industry can draw. But are the needed skills available at the right wage scale? Facts, figures and skill surveys from our files can tell you.

Because these problems are complex, West Penn Power maintains a staff of plant location specialists to assist in your evaluations. There is no charge for this professional service, of course . . . and you may be sure your confidence will be respected. Write today.

CHARLES M. FIFE, *Manager*
Area Development Department

. . . and at low, low interest rates!

Communities in our service area are prepared to roll out the red carpet for desirable industry to the extent of *totally financing* construction of the plant.

It's a unique plan for lease/purchasing that combines funds from non-profit community development corporations and the Pennsylvania Industrial Development Authority with first mortgages through private lending institutions.

West Penn Power is prepared to obtain information for you, in strict anonymity, about communities participating in this plan and, in addition, provide specific information on many other plant location factors to assist in your evaluation of WESTern PENNsylvania as a desirable location.

WESTern PENNsylvania

W E S T P E N N P O W E R

an operating unit of the WEST PENN ELECTRIC SYSTEM

WEST PENN POWER, Area Development Department, Cabin Hill, Greensburg, Pennsylvania TW-2

Yes, I'm interested in WESTern PENNsylvania:

☐ Please contact me in strict confidence. ☐ Please send booklet, "Plant Location Services."

Name_____ Title_____

Company_____ Street_____

City_____ Zone_____ State_____

SPEED: 12,500 rpm

PROBLEMS: none

Quill winding spuns with KIDDE compensators

For 2 years, these winders have operated at 12,500 rpm with the help of a new Kidde double disc compensators, specifically designed for use on spuns and natural fiber yarns. At top efficiency, they've turned out the kind of quills that give top loom performance. There are 5 reasons why these Kidde Compensators give such outstanding performance.

1. You get maximum density control with Kidde Compensators, cutting down on quill changes and assuring uniform quill size as well.
2. There is never any build-up of lint because Kidde Compensators are entirely self-cleaning.
3. Tension is automatically maintained at designed strength of yarn.
4. Kidde Compensators assure absolutely uniform quill diameters.
5. Positive tension control is maintained without any abrasion.

Can you afford to do without these "constant watchmen" over your winding process?

For full information, write to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — JOHNSTON BUILDING, 212 SOUTH TRYON ST., CHARLOTTE, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

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For more data, circle A-90 on Reader Service Card

You're Always

at the
GARLAND BOOTH
106
during the
Southern Textile
Exposition

Garland Picker

Garland Bunter

Garland Lubricant

Garland Rawhide Hammers

AND A BRAND NEW PRODUCT

You'll be sincerely welcomed by . . . "It's great to see you again" (our many old friends) or "Very nice to meet you" (New show acquaintances) at the Garland booth.

Whether an old friend, a new friend, we hope you'll find our display interesting.

For all show goers, you'll be brought up to date on the dependable Garland products that have served even the oldest old-timers for years.

Whether your first or fiftieth show, you're *sure* to want to see *a brand new Garland product.*

Your curiosity will be well-paid!

Garland MANUFACTURING CO.
Manufacturers of RAWHIDE LOOM PICKERS • SPONGE LEATHER BUNTERS • RAWHIDE HAMMERS AND MALLETS

50 WATER STREET • SACO • MAINE

able in diameters of 4, 5, and 6 ft., has been developed by Rapids-Standards Co., Inc., 342 Rapistan Bldg., Grand Rapids 2, Mich.

Circle T-53 on Reader-Service Card

Steam-Water Mixing Valve

Hot water can be produced on the spot from steam and water with a valve marketed by Leonard Valve Co., 1360 Elmwood Ave., Cranston 7, R. I.

Circle T-54 on Reader-Service Card

Continuous Homogenizer

Homogenizing and mixing in a continuous flow are possible with a unit marketed by Eppenbach Div., Gifford-Wood Co., Hudson, N. Y.

Circle T-55 on Reader-Service Card

Sight Feed Valves

A sight feed valve developed by Oil-Rite Corp., 2301 Waldo Blvd., Manitowoc, Wic., is a flow indicator that allows visual observation of a liquid stream of oil.

Circle T-56 on Reader-Service Card

Packaged Boiler

A packaged automatic boiler is offered by Orr & Sembower, Inc., Morganton Road, Reading, Pa. Its three-pass internal-furnace construction gives high efficiency and economical operation.

Circle T-57 on Reader-Service Card

Magnetic Pulley

A magnetic pulley for tramp-iron separation in belt-conveyor systems is announced by Stearns Magnetic Products Div., Indiana Steel Products Co., 635 S. 28th St., Milwaukee 46, Wis.

Circle T-58 on Reader-Service Card

One-Man Conveyor

A conveyor that requires only one man to load, weigh, transport, and discharge bulk materials is announced by Suttle Equipment Corp., 135 S. LaSalle St., Chicago 3, Ill.

Circle T-59 on Reader-Service Card

Dumping Attachment

An 8,000-lb.-capacity, rotating-bin dumping attachment for industrial lift trucks has been developed by Yale

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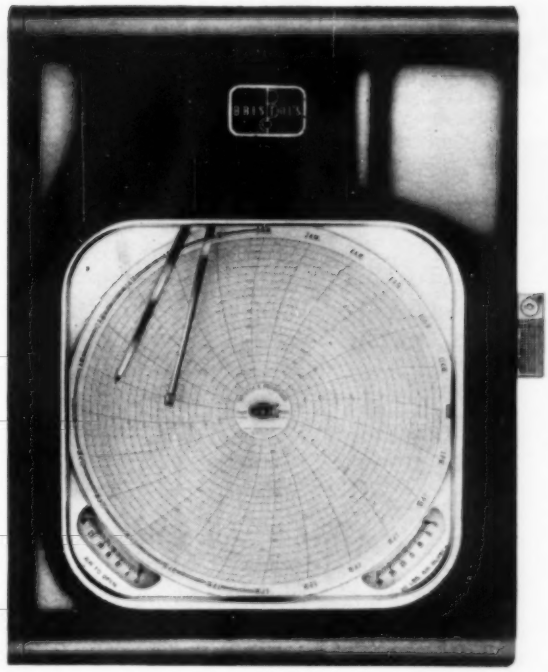


Your newest man can operate and maintain this controller

He'll catch on quick to the Bristol Series 500 Controller without a complicated, lengthy training period.

In fact, your plant can have Bristol Series 500 Controllers, even if you don't have a formal instrument department at all. Many small instrument users are doing this today. Yet the 500's performance is such that one of the largest, most widely known chemical companies in the country just bought seventy 500's for its exacting processes.

Here are the big reasons the 500's a favorite with all instrument users, both large and small: (1) Basic simplicity of the operating mechanism; (2) Bristol measuring elements insure the utmost accuracy.

Another big simplification: You can exactly calibrate the Series 500 Controller with only one single adjustment, even after complete disassembly and reassembly with replacement of parts.

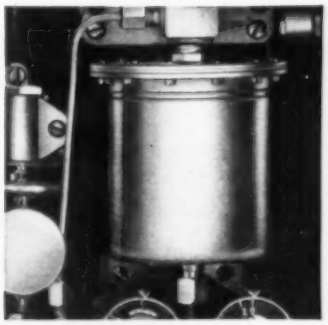
Get complete data on Bristol Series 500 Pneumatic Controllers now, before you order another instrument. Write for bulletin A 130, The Bristol Company, 103 Bristol Road, Waterbury 20, Conn. B-19

Several hundred standard models meet every process requirement including:

These problems:	These operating modes:
1. Cascaded control	1. Fixed narrow band (on-off)
2. Selective control	2. Proportional—to 100% and to 30%
3. Ratio control	3. Reset with wide band—to 400%
4. Time program control	4. Derivative (rate)
5. Pneumatic Transmission	5. Reset plus derivative

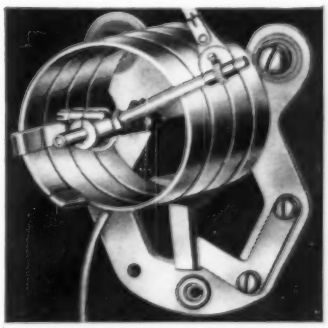
BRISTOL TRAIL-BLAZERS IN PROCESS AUTOMATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

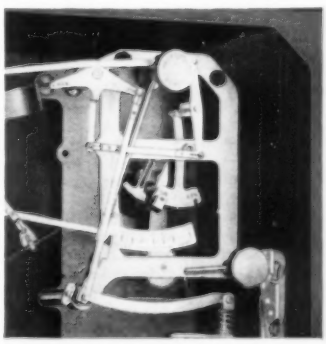


Reset Action Stops (in cylinder), another Bristol exclusive on reset models.

Zero Derivative Setting, exclusive with Bristol on derivative models.



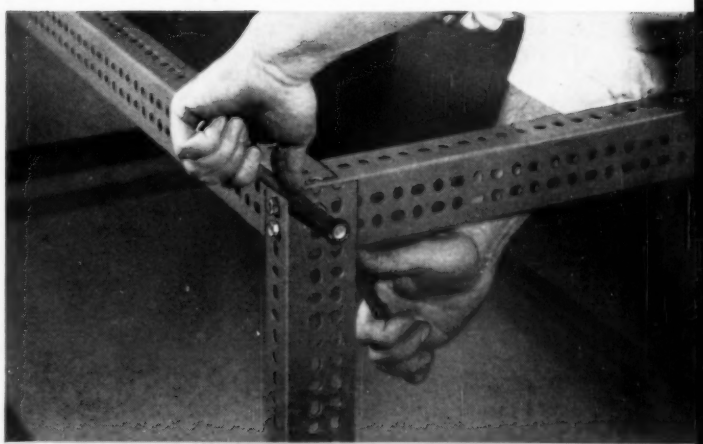
Precision Bristol Measuring Elements insure accuracy.



Built-in Calibration assures permanent accuracy of controller action.

For more data, circle A-92 on Reader Service Card

Stainless Steel Assures



NEW IDEA FOR TEXTILE MANUFACTURES faced with high space and equipment costs. It's Republic METAL LUMBER, the new slotted construction angle designed and engineered by Republic's Berger Division. Versatile, durable, unlimited in application. Simply (1) plan your assembly, (2) cut Republic METAL LUMBER (3) join with bolts. These three steps quickly and economically convert ideas into equipment, such as racks, benches, shop desks. A unique pattern of short slots allows complete flexibility and assures sufficient bolts in bearing to give adequate joint strength. Republic METAL LUMBER is bonderized and finished with baked enamel. Ten angles per bundle, light or heavy gage, 10- or 12-foot lengths, with hardware. Bundle stores in same space as one 2" x 4" piece of lumber. Send coupon for idea-packed catalog today.

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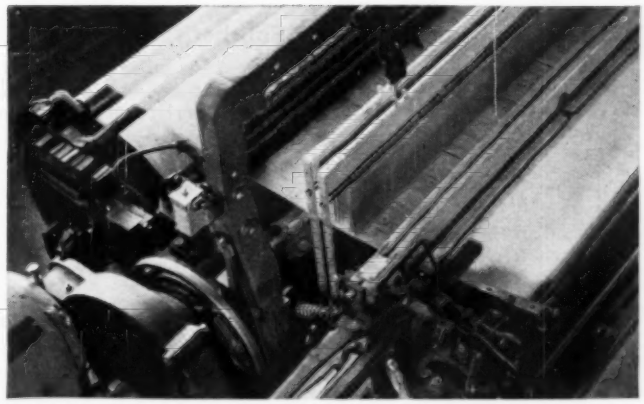
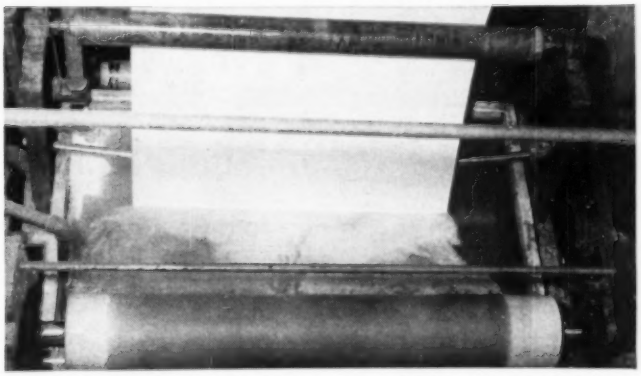
Pure Matched Whites



ASSURANCE OF UNIFORMITY AND CONCENTRICITY are reasons why textile equipment manufacturers specify Republic ELECTRUNITE® Mechanical Tubing. Above, ELECTRUNITE is used for stop motion bars on looms made by Bahan Textile Machinery Company, Greenville, S.C. Carefully rolled flat steel, carbon or stainless, can be inspected on both sides, then formed into a cylindrical shape that's electrically welded for uniform strength. The result is uniform tubes in every dimension, every contour. Send coupon for complete facts on ELECTRUNITE.



PURE MATCHED WHITES ARE ASSURED in equipment fabricated from ENDURO Stainless Steel. Note the whiteness of the fabric coming out of this stainless steel saturator used for open-width goods in the continuous steam bleaching process at Dan River Cotton Mills, Danville, Virginia. Stainless also assures minimum maintenance, easy cleanability, long life.

The reason? Republic ENDURO Stainless Steel stubbornly resists rust and corrosion. It is non-contaminating. It is inert to the chemical concentrations used in the continuous peroxide bleaching process. In fact, stainless steel made possible the continuous bleaching process.

ENDURO eliminates the costly problem of corrosion and metallic contamination eating into profits. It eliminates premature decomposition of solutions and chemical loss. It eliminates danger of stained and unevenly bleached textile products. ENDURO assures batch after batch of pure matched whites.

Equipment fabricated from ENDURO Stainless Steel starts paying off the moment it is placed in operation. It produces immediate savings in maintenance and cleaning costs. Produces long-range savings in extended equipment life.

You can be enjoying the advantages of faster production, lowered costs and higher product quality now. Your equipment supplier has all the facts on ENDURO Stainless Steel, the metal that cuts costs, protects, lasts, and lasts. Contact him, or send us the coupon.

This example of the advantages of stainless steel is brought to you by Republic Steel in behalf of the stainless steel equipment manufacturers and the Republic Stainless Steel distributors—your local steel service centers.

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World's Widest Range of Standard Steels and Steel Products

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MOST COMPLETE ALL-CARGO SERVICE TO AND THRU THE SOUTH

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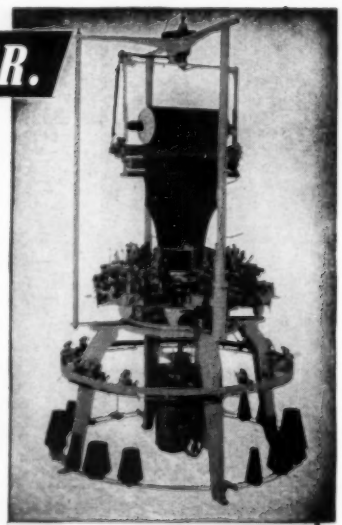
ALL NEW...
TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



HERE'S A TYPICAL EXAMPLE...
Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

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623 ONEIDA ST. • SYRACUSE 4, N. Y.

Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846

For more data, circle A-95 on Reader Service Card

Materials Handling Div., Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Circle T-60 on Reader-Service Card

Floor Polisher

A medium weight, economically priced, 13-in. floor-polishing machine has been announced by Hild Floor Machine Co., Inc., 1217 W. Washington Blvd., Chicago 7, Ill.

Circle T-61 on Reader-Service Card

Fire Extinguisher

Two high-capacity fire extinguishers combining dry chemical powder with the fast action of pressurized squeeze-lever construction have been announced by Fyr-Fyter Co., 221 Crane St., Dayton 3, Ohio.

Circle T-62 on Reader-Service Card

Plug-in Manifolds

Designed for use with Speed King ¼-in. four-way plug-in control valves, a new line of plug-in manifolds is offered by Valvair Corp., 454 Morgan Ave., Akron, Ohio.

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Yard Cranes

Four types of booms for mounting on Hyster lift trucks to make yard cranes are offered by Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.

Circle T-64 on Reader-Service Card

Walkie Truck

Operated from a complete set of controls on the platform, a line of rider-type, high-lift, materials-handling trucks has been introduced by Lewis-Shepard Products, Inc., 125 Walnut St., Watertown 72, Mass.

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Rope Dispenser

To meet the demand for rope by the foot, Columbian Rope Co., Auburn, N. Y., offers a rope dispenser that will hold colpacks, coils, and reels. It is equipped with a single accurate measuring device and cutter.

Circle T-66 on Reader-Service Card

Water-Pressure Regulators

Water-pressure regulators with a

THERE'S QUALITY IN TORQUE-ARM

...AMERICA'S MOST WIDELY USED SHAFT-MOUNTED SPEED REDUCER

Extreme ruggedness and top quality are built into every detail of the Dodge Torque-Arm Speed Reducer—from the specially heat treated helical steel gears to the corrosion resistant semisteel housing. Broad demand has made it necessary to add sizes until today Torque-Arm is America's most complete (and most widely used) line of shaft-mounted speed reducers. Capacities range from 1 to 100 hp; output speeds from 12 to 378 rpm.

Torque-Arm is mounted on the driven shaft, in any vertical or horizontal position. It is anchored by the torque-arm fastened to any fixed object. No need for foundation, flexible coupling, sliding base. No lining up difficulties. The unit is driven through any V-belt drive. Savings up to 1/3 are possible and Torque-Arm's efficiency is high. It delivers 97% efficiency in double reduction models; and almost 99% in single!

Ask you local Dodge Distributor — or write us for bulletin.

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CALL THE TRANSMISSIONEER
— your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the white pages of your telephone directory for "Dodge Transmissioneer."

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NASH

. . . With The Famous No. 79

AUTOMATIC QUILL POLISHER

—protects product quality by preventing damage to fabrics and delicate filaments due to rough quills and broken picks. Cleans, buffs, and polishes loom bobbins at speeds up to 40 pieces per minute.

Send for illustrated brochure with complete information.

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J. M. NASH *Company Inc.*
2364 North 30th Street • Milwaukee 10, Wisconsin
SPECIAL FINISHING MACHINES SINCE 1890

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heavily brass-plated, zinc, die-cast body containing other parts protected against corrosion are being offered by C. A. Norgren Co., Engelwood, Colo.

Circle T-67 on Reader-Service Card

Nickel-Coated Valves

A line of nickel-coated valves especially applicable for chemicals is offered by Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.

Circle T-68 on Reader-Service Card

Adding Machine

An adding machine designed for automatic multiplication but that can be used for all kinds of calculations has been announced by Monroe Calculating Machine Co., Orange, N. J.

Circle T-69 on Reader-Service Card

Lubrication Units

Micro-fog lubrication units that are totally enclosed in splashproof cabinets are available in 1- or 2-qt. oil capacity from C. A. Norgren Co., Engelwood, Colo.

Circle T-70 on Reader-Service Card

Safety Cable

A safety cable for the protection of workmen unloading bottom-dump and hopper cars has been developed by Lowery Brothers, Inc., Dept. TWN, 9332 S. Anthony Ave., Chicago 17, Ill.

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Forged-Brass Valves

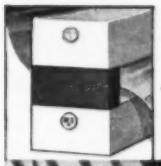
A line of five forged-brass pressure valves that offer high-efficiency and low-maintenance features is available from Air Reduction Sales Co., 150 E. 42nd St., New York 17, N. Y.

Circle T-72 on Reader-Service Card

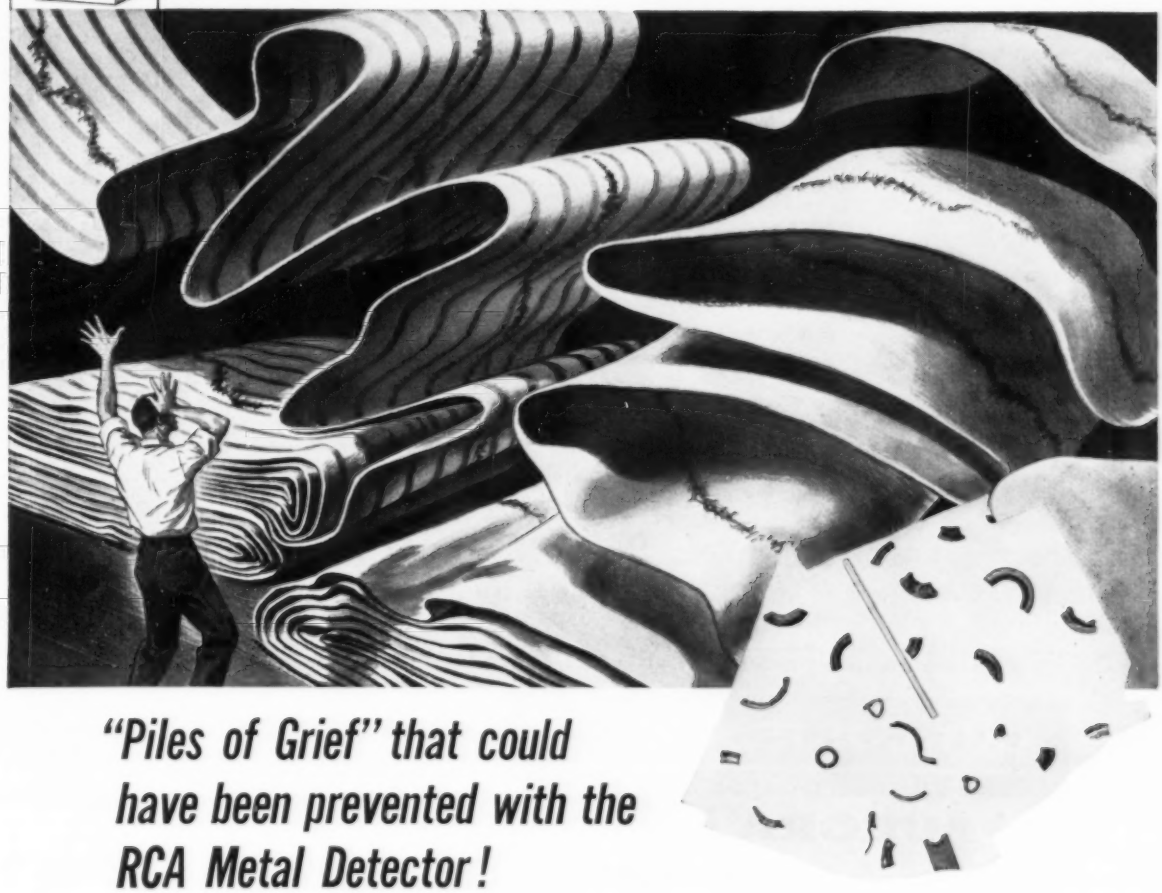
Nonglare Graduations

Nonglare satin-finish-chrome graduated collars are now standard equipment on all 10-in. and larger lathes manufactured by South Bend Lathe, South Bend 22, Ind.

Circle T-73 on Reader-Service Card



...GATEWAY TO SAFETY FROM TRAMP METAL



"Piles of Grief" that could have been prevented with the RCA Metal Detector!

Textile mills frequently report tremendous losses caused by tramp metal. Don't let such a "nightmare" threaten your production profits! Automatically, the RCA Metal Detector specially designed for textile mills, finds hidden metal particles of all types—both magnetic and non-magnetic—even though they are woven or knit into the cloth. And, to be detected, the metal needn't be any bigger than the dot at the end of this sentence.

Used on strip material traveling at speeds from 15 to 1000 ft. per min., with full inspection sensitivity, the RCA Electronic Metal Detector can be arranged to sound an alarm, and/or stop the traveling material. It can pay for itself quickly, many times over through savings in product, decreased downtime, and longer life of costly machinery.

Find out today how the RCA Metal Detector can save you money. Write for latest literature, RCA, Dept. L-140, Building 15-1, Camden, N.J.

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RADIO CORPORATION of AMERICA

CAMDEN, N. J.

In Canada: RCA VICTOR Company, Limited, Montreal

RCA ELECTRONIC METAL DETECTOR

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IMPROVE YOUR QUALITY... WITH A THOMASON ENGINEERING SURVEY

Obsolete equipment and methods is one of the quickest and surest ways there is to put a pinch on profits. A THOMASON survey includes an equipment inspection, the testing of cotton, laps, sliver, roving and yarn. A detailed written report outlines Thomason's quality rating, specific defects or variations with recommendations to improve your quality. This will mean a definite savings in your production costs . . . *will increase your profits.*

The number of mills throughout the world who have employed THOMASON in a trouble shooting, surveying and consulting capacity number well over one hundred. A completely equipped laboratory for quality evaluation and trouble shooting is located in our Charlotte office.

For complete information call or write our technical service department.

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E. L. THOMASON—Engineering Director
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EXTREMELY HIGH EFFICIENCY
Required head and capacity delivered with lower HP motors. Saves space, saves initial outlay, saves operating costs.

LOW NPSH CHARACTERISTICS
Saves head room where critical suction conditions exist.

LONGER TROUBLE-FREE OPERATION
Better construction, finer materials keep lines operating for less cost.

FASTER MAINTENANCE WHEN NEEDED
Exclusive features enable easy disassembly without disturbing pump-motor alignment or discharge piping.

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THE NEW RESINS FOR TREATING WHITE COTTON GOODS
1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each

What are they? How do they react? How do they apply them? An expert in the field answers these and other questions about this important development in textile chemistry.

COTTON CRUSHPROOFING
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An authoritative report that gives a brief background on crushproofing and explains how cotton fiber reacts to resin finishes, how crushproofing works on cotton, the types of chemicals used, and pointers on applying the finishes.

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50¢ each, 40¢ in lots of 20 or more

Here's a tool that helps pinpoint good and bad performance, isolate the need for improvement, and show how management is progressing in one of the basic factors that help determine costs and profits.

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A series of four articles that explain the chemical and physical properties of a number of finishing materials and their applications to and reactions with cellulose and various synthetics.

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Set of 5 articles, $1.25 per set

A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basic of structure, opens the series.

METALLIC-YARN WET-PROCESSING GUIDE
50¢ each, 40¢ in lots of 20 or more

Wall chart shows step-by-step guide for wet processing each of six principal types of metallic yarns. Test gives details for handling different fabrics containing metallic yarns.

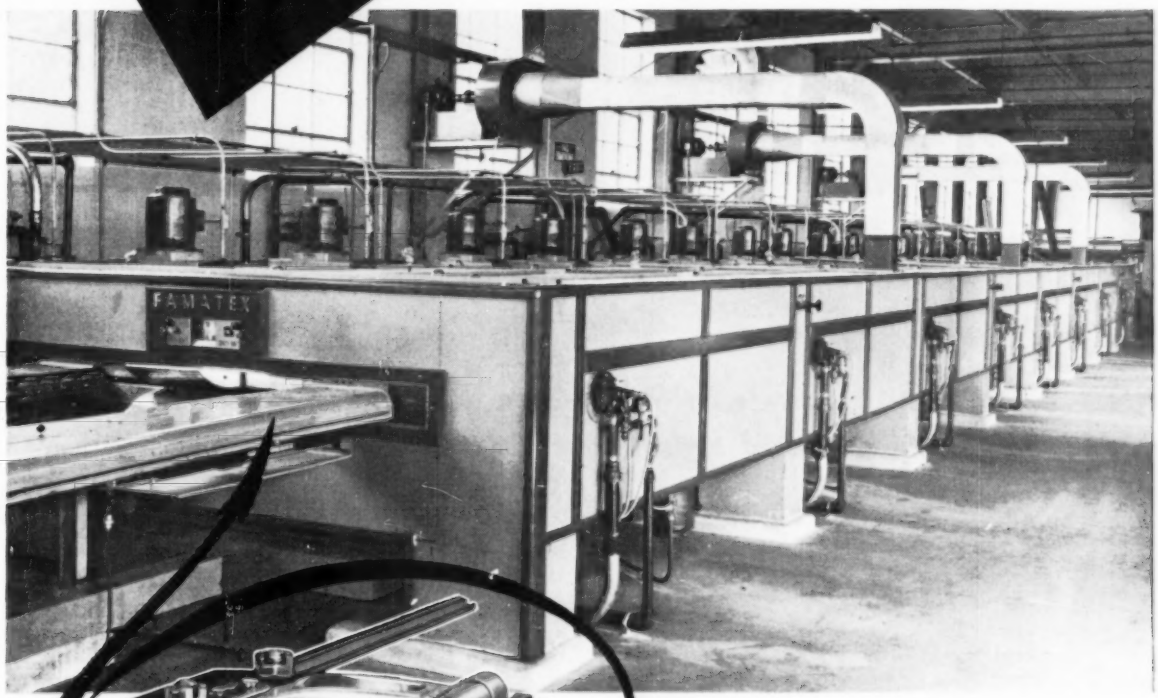
HERE'S A QUICK WAY TO IDENTIFY FIBERS
50¢ each, 40¢ in lots of 20 or more

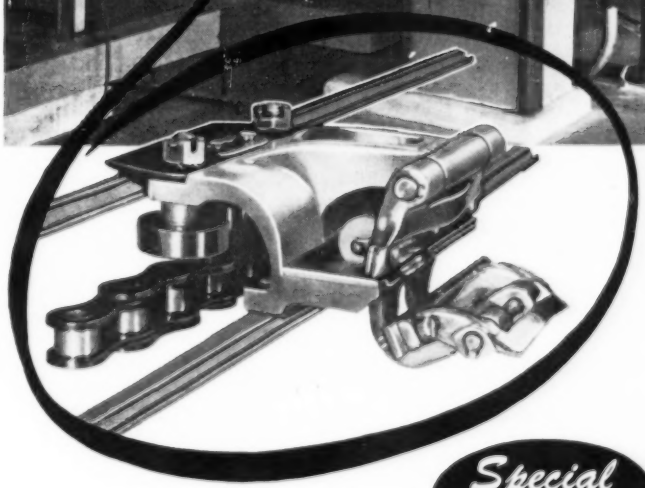
A four-step method of fiber identification is described. A full-color chart of identification stains, a solvent chart, and fiber cross sections are included.

Reiner-Famatex TENTER

WITH LATEST GAS HEATING SYSTEM

THE MOST EFFICIENT TENTER FRAME ON THE MARKET TODAY





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- Combined pin and clip chain link (Special pin chain link for knitted fabrics).
- Ball Bearings and graphite sliding surfaces eliminate friction and oiling problems.
- Most modern Gas heating system provides unusually high drying capacity and a wide range of temperatures (250° F to 450° F) — individually controlled in each chamber.
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- Efficient over-feeding and weft-shrinking devices.

YOU CAN SEE THIS MACHINE IN ACTUAL MILL OPERATION — phone for appointment — and learn how to get better drying and top quality production.

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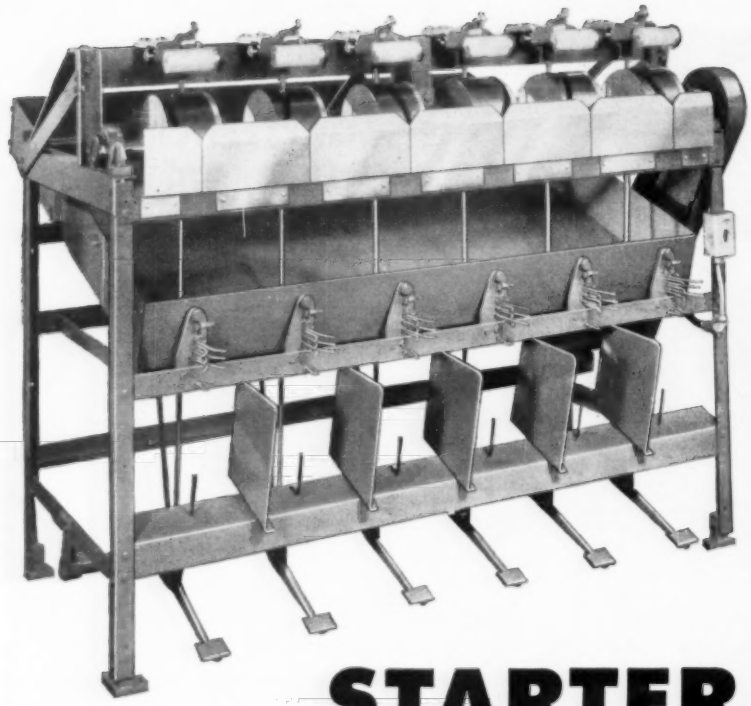

BARBER COLMAN

STARTER MAKER

DESIGNED TO MEET THE NEEDS OF MANY MODERN MILLS

This machine is arranged to wind starter layers of yarn onto a core, from a *cheese* as the supply package. The use of a cheese rather than a bobbin *speeds up* the operation in that *many* "starters" can be made from one supply package; in contrast with the previous method where one bobbin supplied only one, or a limited number, of "starters." Tension fingers positioned above the package allow the proper amount of tension to be introduced.

TAIL FOR MAGAZINING

An additional advantage is that this machine can be used to make a tail of yarn on the "starter," to be used in magazining cheeses. This tail consists of several initial wraps of yarn which are separate and to one side of the main body of the "starter," and subsequently the full cheese. This allows for easy finding of the end, and permits magazining without difficulty. Furthermore, each package will then be stripped completely of yarn, doing away with the necessity of backwinding pieces.

WINDS WOOD CORES

The picture shows wood cores being wound on live spindles, these cores being the kind generally used on twisters, doublers, backwinders, and the like. Adaptors are available for the spindles so that bakelite or dye sleeves can also be wound as "starters" on this machine. The use of a Starter Maker is extremely advantageous for mills dyeing on cheeses, where fresh "starters" are needed every time.

EASILY CONTROLLED, VERSATILE

The operator simply picks up the end from the package, lays it into the tension device, gives it a few wraps around the core, then lets the core down onto the winding drum. When enough yarn is wound on to the core, stepping on the foot pedal lifts the "starter" from the drum and applies a brake. When the end is broken off, part remains held in the tension device, ready for first wraps on the next core. *For complete information, see your Barber-Colman representative, or write direct to the factory.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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at Woodside Mills, Liberty, South Carolina...

Stainless steel is a "must" for dye equipment

Corrosive dye chemicals, including caustic soda, muriatic acid, and sulfuric acid, are in contact with this 4-kier beam and package dyeing machine at Woodside Mills. But the equipment fights off corrosion, even at welds, because it is made of Armco 18-8 ELC Stainless Steel.

"Stainless steel is tops for beam and package dyeing," says Mr. Walter A. McJunkin, Overseer of Dyeing at Woodside Mills, Liberty, South Carolina.

"With stainless steel dye machines we obtain best dyeing results—have fewer work stoppages due to equipment troubles—and lose very little time in cleaning between dye runs."

ELC Stainless For Weld Protection

To insure extra life in contact with corrosive dye chemicals, the 4-kier beam and package dyer above was made from Armco 18-8 ELC (Type 304L) Stainless Steel. Because this special grade contains very little carbon (.03 max.), carbide precipitation adjacent to weld beads is minimized. This means that weld areas fight off corrosion just as well as the rest of the stainless steel, even at dye machine operating temperatures.

If corrosion alongside welds is a major maintenance problem in your mill, ask for information about Armco 18-8 ELC and its even more corrosion-resistant companion grade—18-12 Mo ELC Stainless Steel. For more data, just fill in and mail the coupon.

ARMCO STEEL CORPORATION, 2868 Curtis St., Middletown, Ohio

Send me more information about Armco ELC Stainless Steels.

New steels are born at Armco

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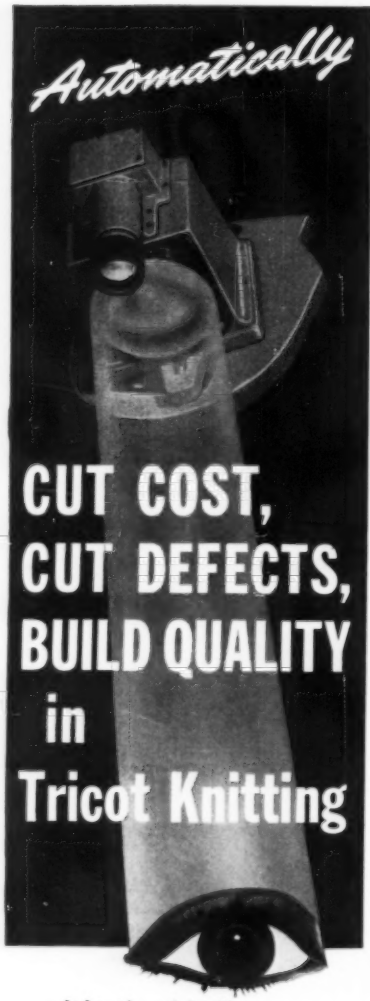

...with the Lindly
Automatic Photo-Scanner

Set the amazing Photo-Scanner to detect your smallest allowable defect. Automatically, it does the rest...continuously scanning the tricot—**as it's knitted**—automatically stops the machine for larger faults.

You get top quality in finished goods—quality **you** determine—a measure of quality recognized throughout the industry.

Find out how the Lindly Automatic PHOTO-SCANNER can save you time and money. Write or call today.

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WOVEN CLOTH DEFECTS
1 to 15 copies, $1 each; 16 to 30 copies, 75¢ each; over 30 copies, 60¢ each

An illustrated series of articles that show each major cloth defect, give its causes, and explain how to eliminate it.

COTTON-FIBER TABLE
50¢ each, 40¢ each in lots of 20 or more

New edition lists raw-cotton properties and manufacturing performance of the 11 leading varieties of cotton. Other data show fiber consumption in the U. S. and properties of cotton used in 32 basic textiles.

WHAT SUPERINTENDENTS EXPECT OF OVERSEERS
25¢ each, 15¢ in lots of 20 or more

A report of a TEXTILE WORLD forum at which four leading mill superintendents discussed what qualifications overseers need to be successful, what traits of character and personality are indispensable, and what failures are most often encountered. An editorial comment, "Where Supervisors Fail," is also included.

HOW TO REDUCE CARD WASTE
50¢ each, 40¢ in lots of 20 or more

This report of a one-year six-mill cooperative study shows that card waste can be reduced as much as 3% of lap weight; settings, speeds, and modified assembly are major key factors; and recommended speeds and settings, besides reducing carding waste, produce yarns of equal or better strength and appearance than conventional settings.

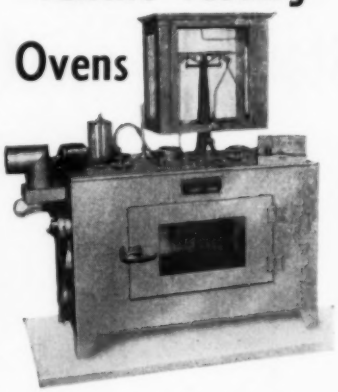
REPORT ON NONWOVEN FABRICS
50¢ each, 40¢ in lots of 20 or more

This comprehensive report on one of today's fastest-growing textile products gives the latest information on important manufacturers of nonwoven fabrics, what nonwoven materials are used for, equipment and manufacturing methods, and other data.

HOW TO BE A BETTER SUPERVISOR
50¢ each, 40¢ in lots of 20 or more

A series of articles on human relations and the supervisor's dealings with workers. The material tells supervisors how to increase their effectiveness by learning to understand people better. Pointers on how to improve employee morale, get worker cooperation, and reduce labor turnover are included.

Textile Testing Ovens



EMERSON OVENS

For accurate testing of water content in yarn, small wool samples and other textile material. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 basket 4½" sq. x 6" deep, complete with weighing balances, sensitive to 3 mg., weights, and automatic temperature control. Table space 20" x 40".

Details of other style Ovens with specially designed baskets to handle YOUR TESTING PROBLEM on request.

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GREATER PROTECTION to your AIR LINE!

M-B

AUTOMATIC WHIRL-A-WAY
AIR LINE FILTER
MODEL W-1
and TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

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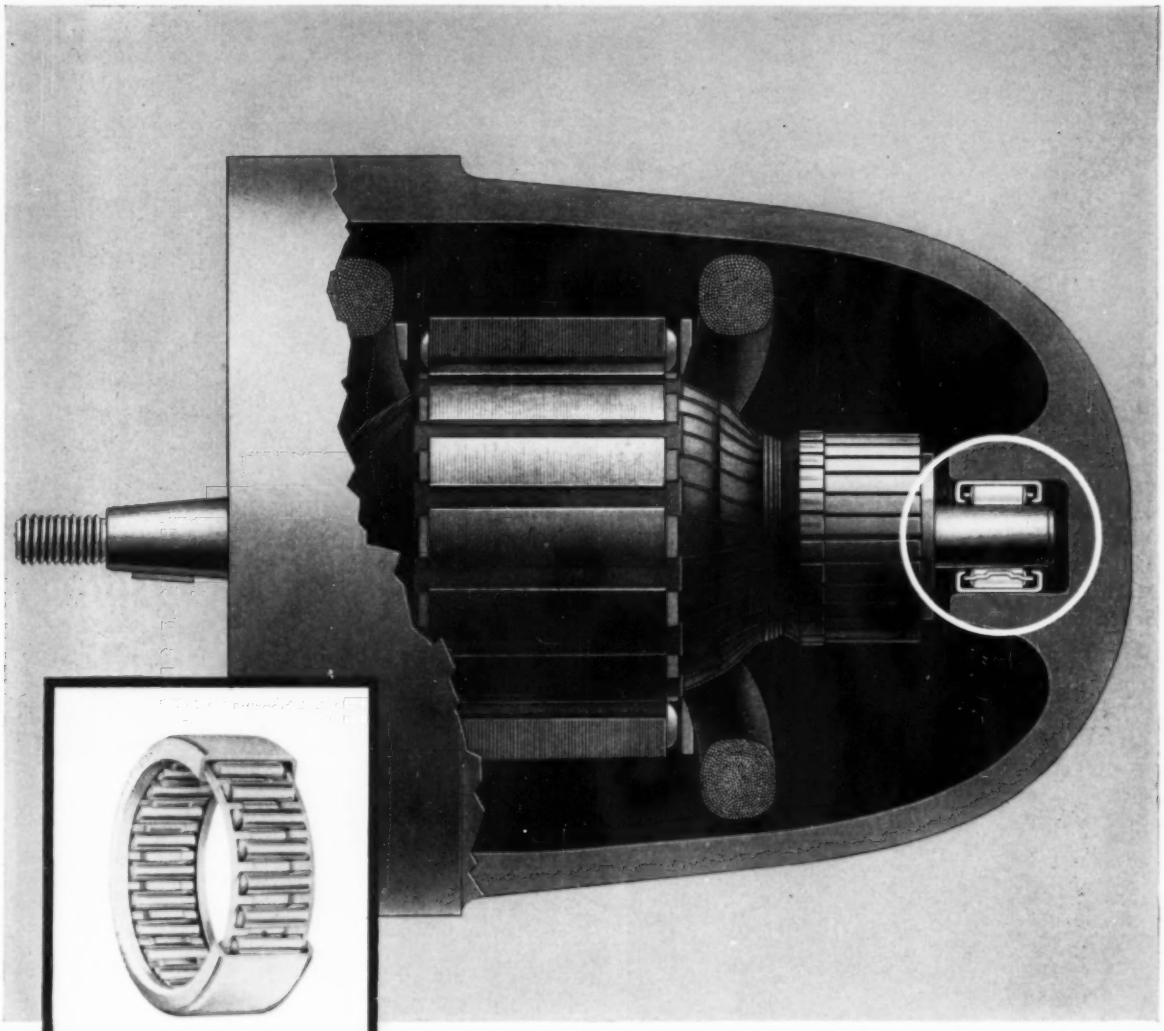

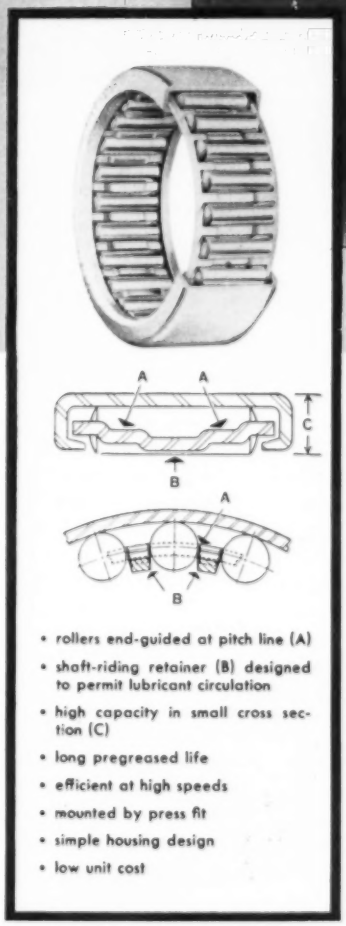

- rollers end-guided at pitch line (A)
- shaft-riding retainer (B) designed to permit lubricant circulation
- high capacity in small cross section (C)
- long pregreased life
- efficient at high speeds
- mounted by press fit
- simple housing design
- low unit cost

Save up to 50%
on armature bearing costs!

Low unit cost of the new Torrington Drawn Cup Roller Bearing reduces armature bearing cost as much as 50%. This unique bearing gives excellent service at high speed and permits prelubrication for life.

Test installations and service applications show the bearing performs efficiently at speeds up to 25,000 rpm in intermittent service of 1000 hours and more. In such service, initial lubricant lasts the life of the motor. Most applications require no seals. This, with the simplicity of housing design, contributes further to economy.

Designers are invited to evaluate the Torrington Drawn Cup Roller Bearing for such applications as generators, power tools, electric mixers, vacuum cleaners and other appliance motors where considerations of cost, speed, efficiency and light weight are paramount.

Services of Torrington's engineering staff are offered to assist you in design developments of every type of electric motor. **The Torrington Company, Torrington, Conn.—and South Bend 21, Ind.**

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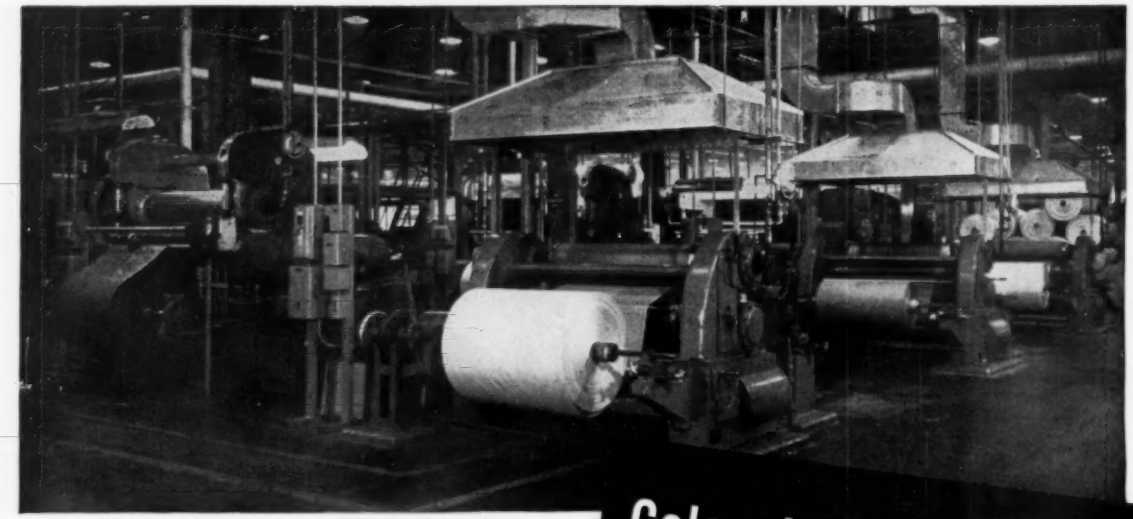
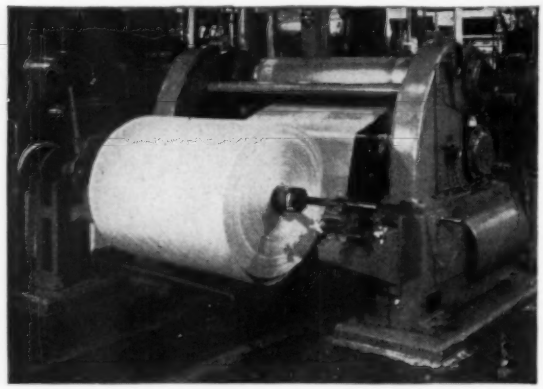
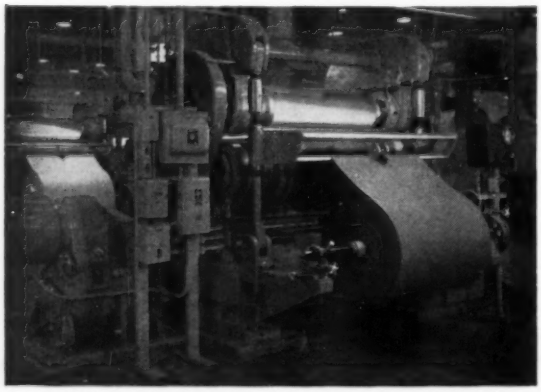


View of finishing operation at The Springs Cotton Mills, Grace Bleachery Division showing Appleton Machine Company 20 Ton Embossers and 50 Ton Schreiner Calenders.

Colonel Elliott Springs Chooses Appleton



One of three Appleton 20 Ton Embossers in use at The Springs Cotton Mills, Grace Bleachery Division.



One of three Appleton 50 Ton Schreiner Calenders specially adapted for everglaze finishes at Springs Cotton Mills, Grace Bleachery Division.

The uncommon elegance of Springmaid sheets can be attributed to Colonel Elliott Springs' shrewd judgment of textile machinery.

According to a trade journal article, the famous Springs Cotton Mills owner demands equipment that meets these requirements:

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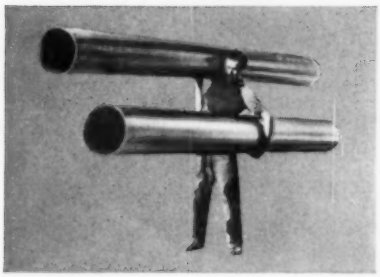

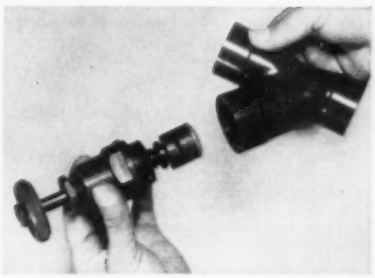

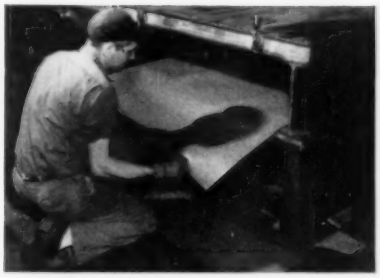

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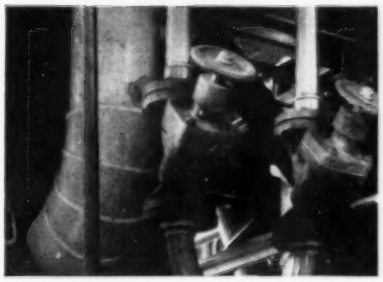

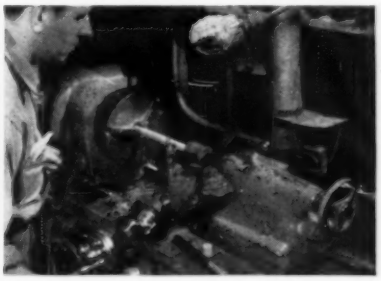

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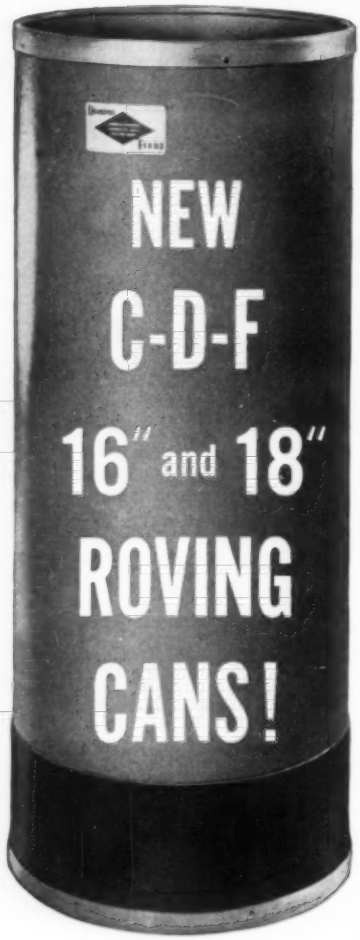

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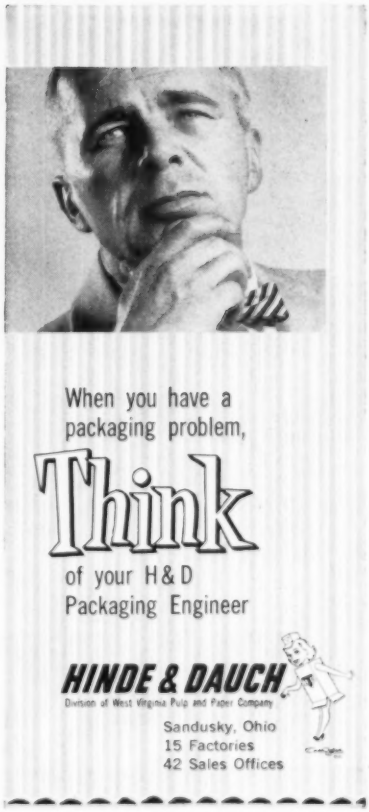
An authoritative report that gives a brief background on crushproofing and explains how cotton fiber reacts to resin finishes, how crushproofing works on cotton, the types of chemicals used, and pointers on applying the finishes.



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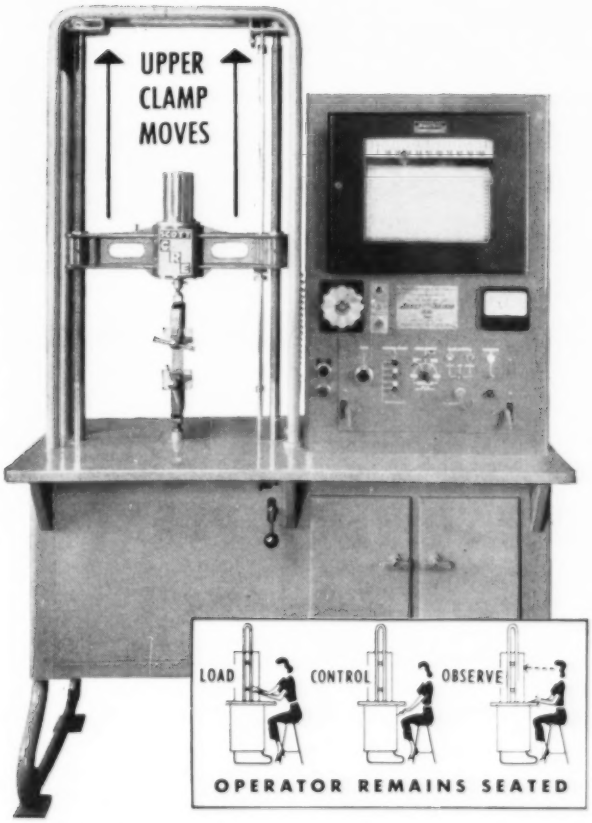

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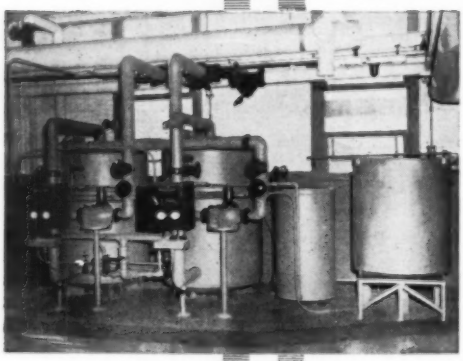

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—these *two* provide maximum napping efficiency.

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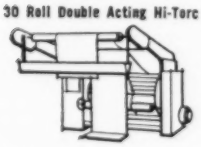
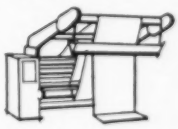
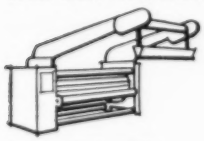
There are 5 Gessner Hi-Torc Nappers



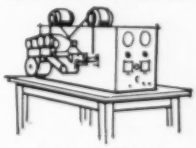
24 Roll Double Acting Hi-Torc



24 Roll Single Acting Hi-Torc



24 Roll Knit Goods Hi-Torc

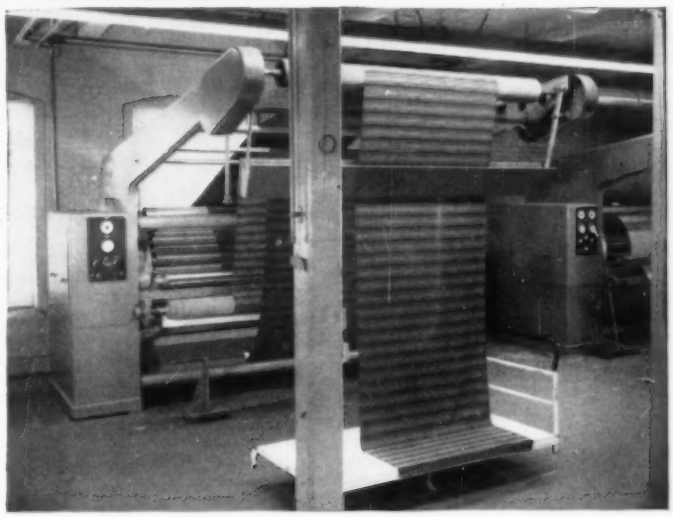


Laboratory Hi-Torc

Gessner manufactures a Hi-Torc napper for every fabric and every finish. There are five in all — 30 Roll Double Acting Hi-Torc, 24 Roll Double Acting Hi-Torc, 24 Roll Single Acting Hi-Torc, 24 Roll Knit Goods Hi-Torc, Laboratory Napper. Each one embodies Gessner's exclusive, variable, measured and recorded torque drive or napping energy.

Higher cloth speeds are attained, or production increases ranging up to 400%, and with finishes seldom before equalled in variety and quality.

The new Gessner Blend-matic, for the first time, regrinds napper roll wire to the exact specifications demanded by modern high-speed nappers. An internal grinding wheel and a swivelled working head, which follows the spiral wind of the wire, shape each wire to a long, smooth, blended point required for precision napper operation.



30 Roll Double Acting Hi-Torc Napper

Blend-matic Roll Grinder. Inset shows internal grinding wheel.

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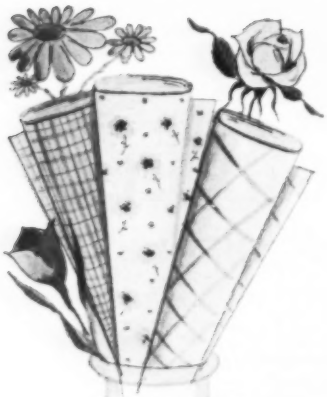

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See and Work Better with Modern Lighting Practice

The labor content of nearly any manufactured products is the largest single item in its cost. And therefore any increase in the efficiency of labor has a large proportional effect on the total manufacturing cost of a product.

The environment in which a worker's eyes function has three separate influences on the amount and quality of his work:

1. Efficiency of vision. How well and how quickly he is able to do the parts of his job that depend on vision.
2. Physical condition. It can be severely affected by eyestrain, headaches, or other eye-induced ailments.
3. Morale. The evasive but important sense of well-being is easily affected by the brightness or oppressiveness of his surroundings.

More Than Light Is Needed

There is more to improved vision than the indiscriminate pouring of more light on a work area. Good lighting illuminates an over-all area, not just localized spots.

In planning good lighting, you must consider three characteristics of light: (1) the quantity of illumination necessary for the type of work being done; (2) the direction the light is cast, from the standpoint of both illuminating the work and avoiding ill effects on workers; and (3) excessive contrast between lighted areas and unlighted areas or dark-colored ceilings, walls, or floors.

People like to work in well-lighted places. Given a chance to choose foot-candle levels for reading a book, they'll choose 200 to 300 ft-cs., and more for seeing fine details. Invariably the foot-candles preferred are higher than today's practical standards for general lighting.

Good Lighting Has an Objective

Good general lighting is basic to every interior. The objective is: by proper layout of overhead lighting equipment, to obtain a reasonably uniform level of illumination throughout the area. And this objective takes into account the light distribution from any given type of luminaire or light-control device.

Although high levels of general lighting have eliminated the need for multiplicity of individual localized lights, there are many conditions where high levels are impractical or uneconomical to provide general room lighting to meet all seeing needs today.

These conditions occur most frequently in factories where fine work and inspection are done. Such precision eye tasks may require 500 or more foot-candles to see accurately.

Extra Lights Aid Dark Spots

Supplementary lighting is invariably required in production areas where overhead conveyors, piping, and air-conditioning or humidifying equipment blot out at the work area much of the effectiveness of the over-all general-lighting system.

Placing multiple rows of fluorescent lamps immediately above fine-work areas and inspection tables is a simple way of getting 300 or more foot-candles on the work.

In the early days of plant lighting, only 10 ft.-cs. were common and there were often complaints of too much light. But this defect was caused by a lack of brightness control. A comfortable 300-ft.-c. general lighting level today has less sensation of brightness than the old 10-ft.-c. era.

Luminaire rating systems such as VCI (visual comfort index) are currently coming into use as systems of appraisal of seeing comfort.

Bright Surfaces Improve Seeing

The brightness of surfaces within a room is also related to seeing comfort. This phase of illuminating-engineering knowledge has led to the general adoption of light-colored work surfaces and lighter wall finishes and floors.

Foot-candle standards alone have limitations in evaluating lighting requirements, and many other factors are involved:

1. Large area sources of low-surface brightness and good diffusion are necessary for inspection of shiny or polished surfaces or materials.
2. Concentrated directional light sources, grazing mats, or nonshiny surfaces show up surface defects by creating dark shadows.
3. Luminous panels against which translucent materials are inspected.
4. Color accents and decorative applications. *E. A. Linsday and R. B. Chipman, General Electric Co. Plant-Engineering Round Table, Greenville, S. C.*

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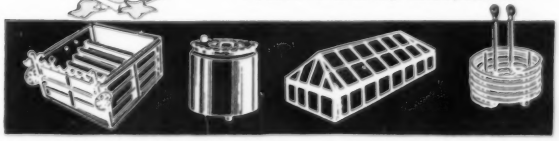

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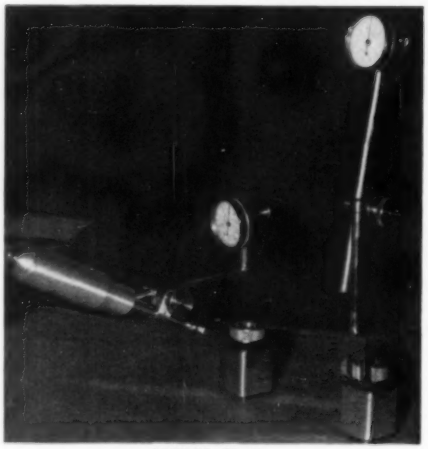

MODEL CS-102

These units are used for checking the runout or eccentricity of both top and bottom spinning rolls and roving rolls in textile mills. Roll runout causes a loss of skein strength and an increased non-uniformity in the yarn. The magnetic base holds the unit in position so that the dial indicator will rest at approximately the center of the roll and normal to the surface of the roll. As the frame is running, the fluctuations of the Dial Indicator will read the runout which is twice the eccentricity.

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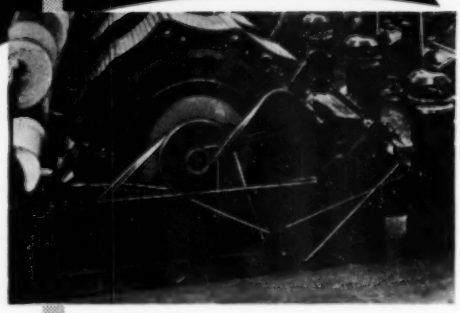

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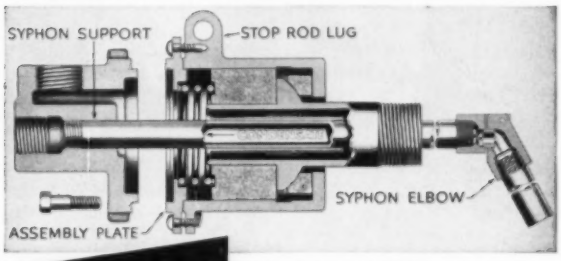

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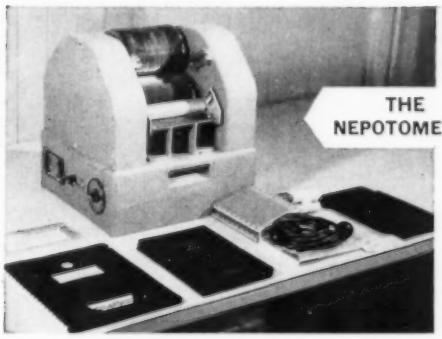
FORECAST NEPPING QUALITIES OF COTTON



Developed at N. C. State College School of Textiles and on view there.

25 grain sample is processed in four minutes and is comparable to your standards of acceptable cotton for each quality of your yarns and fabrics. Literature and price on request.

WRIGHT MACHINERY COMPANY
DIVISION OF SPERRY RAND CORPORATION
DURHAM, NORTH CAROLINA
CANADA: Sperry Gyroscope Ottawa Limited
P. O. Box 90, Ottawa, Ontario, Canada

Special Rep. for Nepotometer:
THE FRED S. WHITESIDE CORP.
10 High Street Boston 10, Mass.

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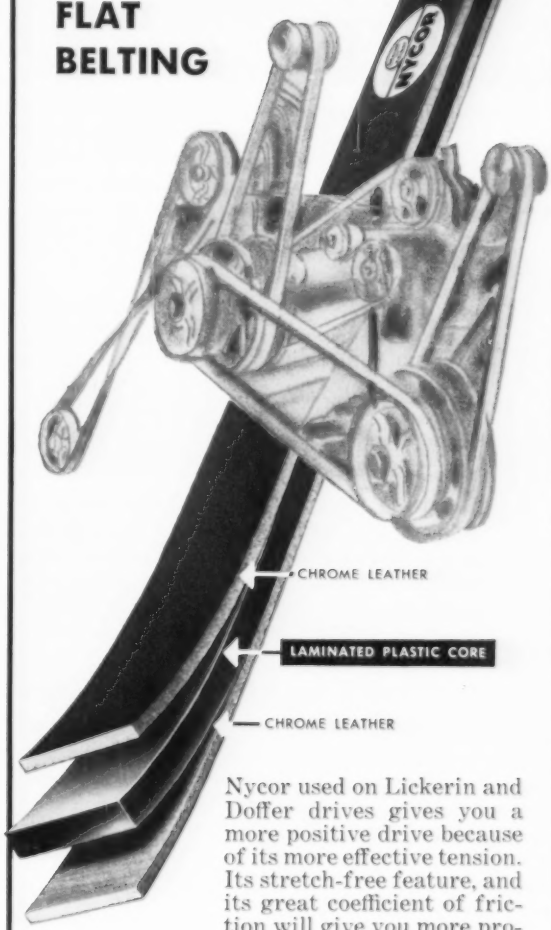
For **TEXTILE** *Machinery*

GRATON AND KNIGHT

NYCOR

FLAT BELTING



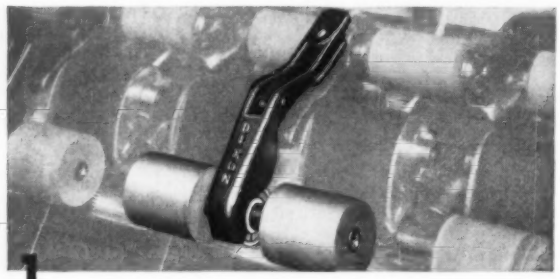
Nycor used on Lickerin and Doffer drives gives you a more positive drive because of its more effective tension. Its stretch-free feature, and its great coefficient of friction will give you more production — eliminate take-ups and reduce maintenance costs.

Send For Brochure on Nycor Belting

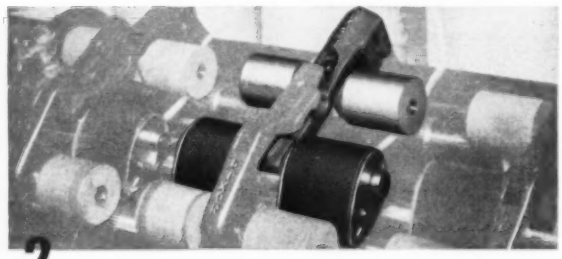
GRATON & KNIGHT *Company*
WORCESTER 4, MASSACHUSETTS

For more data, circle A-124 on Reader Service Card

2-Step Installation of DIXON *self-aligning Super Saddle Guide* can spread out your investment



1. Install Dixon front roll and saddle combination to eliminate all front roll oiling. Throw away front cap bar blocks, major source of dirt and wear. Save money from the outset, get almost immediate return of full investment.



2. Add Dixon middle and back rolls and saddles to reduce drafting costs still further with elimination of all oiling; lessen cleaning requirements; spin stronger, more even, spotless yarns. Complete your installation this way any time — no parts wasted, no costly elements to throw away.

Proved By Over 100 Leaders

Dixon Saddle Guide assemblies for more than 1,000,000 spindles (Duo-Roth or Casablanca type spinning) have been proved in service by over 100 textile production leaders like Deering-Milliken (92,000 spdls.)
Cartex Mills (72,000 spdls.)
Martha Mills (38,000 spdls.)
J. P. Stevens (73,000 spdls.)

Dixon's complete changeover costs much less than any competing roll weighting device; eliminates all top roll cap bars and all oiling, is so perfectly engineered that misalignment is impossible.

Write for complete data on Dixon Super Saddle Guide

724-7

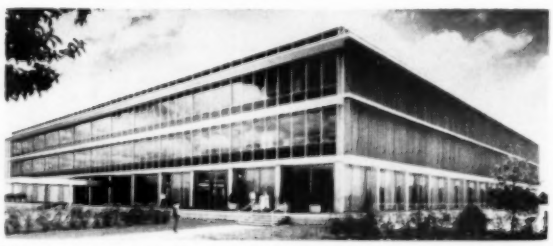
DIXON CORPORATION
BRISTOL RHODE ISLAND

Southern Sales: R. E. L. Holt, Jr., and Associates, Inc.
Box 1319, Greensboro, N. C. and Lawyer's Office Building, P. O. Box 321, Greenville, S. C.

Manufacturers of Drafting Devices since 1876

NEWS ABOUT SUPPLIERS

AIR REDUCTION CHEMICAL CO., New York, N. Y.—Has named J. M. Tinnon vice president in charge of sales, R. A. Wilson vice president of production and engineering, and Dr. G. B. Carpenter director of development for the chemical division. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.—Has appointed E. T. Cuddeback Southeastern manager of general-products-division sales, headquarters in Atlanta, Ga. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Has announced the formation of a Process-Chemicals Dept. by the Industrial-Chemicals Div. The new department was created through the merger of the company's Heavy-Chemicals and Manufacturers-Chemicals Depts. H. C. Milton has been appointed manager of the department and R. M. Goddard sales manager.



THIS BUILDING, costing $11½-million, is the new consolidated headquarters for sales, manufacturing, and corporate groups for Reynolds Metals Co., Richmond, Va.

AMERICAN RESEARCH & TESTING LABORATORIES, INC., Pawtucket, R. I.—Is a new consulting organization specializing in textile problems. Dr. W. G. Parks is president of the firm and director of the laboratories. The laboratories are equipped to handle chemical and physical evaluations of fibers and fabrics. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has formed a new division, the Fibers Div., a consolidation of the company's Rayon and Acetate Divs. H. H. Bitler has been promoted to general manager of the division. G. L. Storm has been named director of sales. M. V. Macfarlan has been named sales manager.

ARIZONA CHEMICAL CO., New York, N. Y.—Has named Whitaker Oil Co., Atlanta, Ga., distributor of Acintol tall-oil fractions in Georgia. . . . **CENTURY ELECTRIC CO.**, St. Louis, Mo.—Has named W. D. Helm manager of the Chicago, Ill., office. F. L. Bettie has been appointed acting district manager of the company's Milwaukee, Wis., branch office, succeeding Mr. Helm. The new manager of the Omaha, Neb., office is G. Hodgskiss, former manager of the Chicago office. . . . **CHEMSTRAND CORP.**, New York, N. Y.—Has named E. T. Powers director of market planning and development in the Marketing Div. The Technical Sales Service and Applications Research Depts. have been combined into one department, Applications Research and Service.

CONTINENTAL-DIAMOND FIBRE CORP., Newark, Del.—Has named M. D. Blumenthal supervisor of materials-handling-containers sales. . . . **CLEVELAND CRANE & ENGINEERING CO.**, Wickliffe, Ohio—Has appointed W. P. Hanks Midwest-district manager and R. M. Underwood Northeast district manager of the Cleveland Tramrail Div. . . . **CROWN CHEMICAL CORP.**, Providence, R. I.—Has named W. G. Estes to the technical sales staff, with headquarters in Greenville, S. C. . . . **COL-**

Eastman's new polyester

KODEL®

THE CHAMPION OF ALL STAY-FRESH FIBERS

for all three systems...cotton, woolen and worsted. Kodel can give new drive to the apparel industry. Steps up wrinkle resistance, cuts down pilling, makes possible a radically new group of stay-fresh and wash-and-wear constructions

In the past few years more new fibers have been introduced than you can shake a shuttle at. So what makes Kodel worth all the fanfare? Everything that years of research and development, testing and retesting, could pack into a polyester fiber.

RESILIENCE? Kodel is the new stay-fresh champion. The laboratory men say it's the most resilient polyester fiber yet. You'll say it makes garments that stay neat *longer* and hold a press *better* than anything else before.

PILLING? Kodel lets you go into a whole new range of constructions where pilling had you licked before. Winter-weight flannels, for example.

COVERING POWER? Kodel goes further than any polyester yet. Now cotton-blend shirtings can be cooler and more comfortable...with wash-and-wearability that won't wash out.

PROCESSING? No headaches here. Kodel blends beautifully with other fibers...runs easily on all systems...dyes without difficulty in a huge range of shades.

EASE OF CARE? Tops...whether your hang tag reads "wash-and-wear" or "easy care." Besides, Kodel is less heat-sensitive than most other fibers in the wash-and-wear field so there's more freedom on "touch-up" ironing.

APPEARANCE AND COMFORT? Just great! Consumers who have wear-tested suits with Kodel have commented on their richer-looking appearance. And with Kodel, fabrics have a softer, more inviting hand.

Unfortunately, quantities of Kodel are limited right now.

First to introduce the new fiber are the mills and converters who have helped us develop Kodel. Plus the cutters who have proved what it can do (they'll have it in their *Spring* line). You'll be hearing more about Kodel...soon!

Kodel is the registered trademark for Eastman polyester fiber

EASTMAN CHEMICAL PRODUCTS, INC., SUBSIDIARY OF EASTMAN KODAK COMPANY, 260 MADISON AVENUE, NEW YORK 16, N. Y.

For more data, circle A-126 on Reader Service Card

TON CHEMICAL CO., Cleveland, Ohio–Has named C. Dill, Jr., sales representative in the Philadelphia-Baltimore-Richmond-Washington, D. C., area.

DAYTON RUBBER CO., Dayton, Ohio–Has announced that L. C. Strobeck, vice president in charge of mechanical-goods sales, has retired. . . . **DIAMOND ALKALI CO.**, Cleveland, Ohio–Has named W. H. McConnell vice president in charge of marketing, and H. B. Clark, director of sales. W. Mantz becomes general manager of the Soda Products Div. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.–Has established an export merchandising group for the Textile Fibers Dept., headed by G. B. Lewis. . . . **EASTMAN CHEMICAL PRODUCTS, INC.**, New York, N .Y.–Has established a new dye-service plan, the Eastman Plan for Specification Dyeing, designed to eliminate uncertainty about colorfastness.

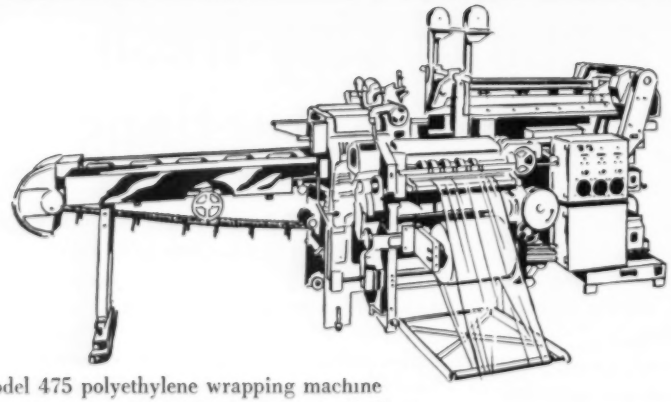
FOXBORO CO., Foxboro, Mass.–Has appointed H. S. Bean consultant on flow measurement. . . . **GENERAL ANILINE & FILM CORP., DYESTUFF & CHEMICAL DIV.**, New York, N. Y.–Has transferred the major section of the division's technical laboratory from 435 Hudson St., New York, to the company's central laboratory in Easton, Pa. . . . **GENERAL PRECISION EQUIPMENT CORP., ASKANIA REGULATOR CO.**, New York, N. Y.–Has changed its name to GPE Controls, Inc. . . **RODNEY HUNT MACHINE CO.**, Orange, Mass.–Has appointed Hayes Textiles, Inc., Spartanburg, S. C., exclusive sales representative of wet-finishing machinery in the South. . . . **JEFFERSON CHEMICAL CO., INC.**, New York, N. Y.–Has named J. W. Gilroy export sales manager.

JENKINS METAL SHOPS, Gastonia, N. C.–Is exclusive distributor for industrial sound-detector equipment made by Burke & Co., Worton, Md. . . . **MARVEL SPECIALTY CO.**, Paducah, Ky.–Has been licensed to manufacture under Southern Textile Machinery Co.'s basic patent No. 209574 and patents still to be issued.

MINNEAPOLIS-HONEYWELL REGULATOR CO., Philadelphia, Pa.–Has opened a Washington, D. C., sales office for Datamatic. . . . **MONSANTO CHEMICAL CO.**, St. Louis, Mo.–Has named W. C. Dennis Southern-regional manager of the production and exploration department of the Lion Oil Co. Div. W. R. Haas has been appointed director of marketing for the Overseas Div. N. E. Horton has been appointed director of sales and

CLAUDE L. HAYDEN (left) has been named general district sales manager of American Enka Corp., New York, N. Y. L. L. FRONEBERGER, JR., (center) has been appointed vice president of Bullard-Clark Co., Charlotte, N. C., and Danielson, Conn. LEWIS A. ROOT (right) has been named sales manager of Lindly & Co., Mineola, N. Y.

NO NEED TO WAIT! GET POLY*

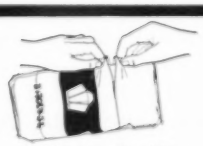


*The Model 475 polyethylene wrapping machine not only handles conventional films such as cellophane, waxed paper, and laminated foils; — but also the new plastic films including polyethylene in the low, medium and high densities, heat-sealing Mylar, cellulose acetate, Polymer-coated cellophane, Vitafilm, Pliofilm, poly-coated papers, etc.

Now . . . Overwrap At Speeds Up to 65 Per Minute in These Ranges:
4¾" to 12½" Lengths . . . 3" to 8" Widths . . . ½" to 4½" Heights

COMPARE FEATURES AND PERFORMANCE BEFORE BUYING

Gently Carries Film Through Machine



Cut Scoring Provides Convenient Package Opening

Exclusive "Thermo-Pad" Sealing Process Creates "Weld-Tite" Seals

BATTLE CREEK *Continuous Flow* PACKAGING
packaging machines, inc.

115 TWELFTH STREET
BATTLE CREEK, MICHIGAN

R. L. Vincent assistant director of sales. . . . **NATIONAL STARCH PRODUCTS, INC.,** New York, N. Y.–Has appointed F. N. Roberts coordinator of market research. . . . **POLYMER INDUSTRIES, INC., TEXTILE CHEMICALS DIV.,** Springdale, Conn.–Has appointed J. H. Hennessey, Jr., technical advisor.

PENICK & FORD LTD., INC., Cedar Rapids, Iowa–Has named Dr. J. E. Killinger director of technical-sales service. . . . **RELIANCE ELECTRIC & ENGINEERING CO.,** Cleveland, Ohio–Has transferred J. H. Chambers to the Atlanta, Ga., sales office and M. H. Hare to Greenville, S. C. . . . **ROBERTS CO.,** Sanford, N. C.–Has promoted M. C. Golden to assistant sales manager. R. F. Walker will handle sales in southern Georgia and Alabama, with headquarters in Columbus, Ga. M. O. Bradshaw is the company's representative in north Georgia-Alabama and western Tennessee, with headquarters in Atlanta, Ga. . . . **SCOTT & WILLIAMS, INC.,** Laconia, N. H.–Has formed the AMSL Corp. to make the automatic-looping invention of Messrs. Mann and Bley, Philadelphia, Pa., for all foreign and domestic hosiery and outerwear mills. . . . **STANLEY WORKS,** New Britain, Conn.–Has named J. W. Bamert general sales manager of Stanley Hardware. . . . **STEDCO SOUTHERN, INC., SUBSIDIARY OF STEEL HEDDLE MFG. CO.,** Greensboro, N. C.–Has appointed R. M. Turner Co., Clinton, S. C., sales agent for South Carolina and Augusta, Ga.

JOSEPH A. AMATO (left) has been elected president of Hamilton Factors Corp., New York, N. Y. J. M. MOON (center) has been elected executive vice president of the Signode Steel Strapping Co., Chicago, Ill. HENRY E. MILLSON (right) of th Dyes Department, American Cyanamid Co., Bound Brook, N. J., has been chosen to receive the 1958 Olney medal from AATCC.

STEIN, HALL & CO., INC., New York, N. Y.–Has named R. A. Bruno general sales manager in the St. Louis, Mo., branch office. . . . **STEVENSONS (U.S.A.), INC.,** New York, N. Y.–Has named W. A. Smith sales manager. . . . **TEXIZE CHEMICALS, INC.,** Greeenville, S. C. –Has named E. Doell operations manager. . . . **UNION CARBIDE CORP.,** Moorestown, N. J.–Has completed its new consolidated sales office for its five divisions.

USTER CORP., TESTING EQUIPMENT DIV., Charlotte, N. C.–Has named W. L. Boyd sales engineer with headquarters in York, S. C. . . . **VICTOR RING TRAVELER DIV. OF SACO-LOWELL SHOPS,** Providence, R. I.–Has transferred its Southern office from Gastonia, N. C., to Greenville, S. C. . . . **WATSON-WILLIAMS MFG. CO.,** Millbury, Mass.–Has elected J. K. Watson vice president. . . . **WERNER TEXTILE CONSULTANTS,** New York, N. Y.–Has moved its New York office to 1430 Broadway.

OVERWRAPPING SAVINGS NOW!

THE MODEL 475

IS THE MACHINE FOR THE FUTURE!

Select the Model 475 now and automatically anticipate future packaging opportunities. Its wide range gives you great latitude in package sizes for future needs, and because the machine is engineered both for today's regular films and tomorrow's plastic films *(see box), you are assured that your changing merchandising requirements have been anticipated. BATTLE CREEK LOOKS TO YOUR FUTURE.

IS VERSATILE!

Changeover in 15 minutes or less! Its wide range, and ability to fold and seal against a normal end of the package, or to draw the fold underneath and seal against the bottom, offers wide versatility in designing future packages for use on this all-purpose machine.

GIVES ALMOST UNLIMITED FILM CHOICE!

Review the overwraps now handled.* The exclusive "Thermo-Pad" sealing process creates "weld-tite" seals on all these materials. Now choose the film you prefer, and know the Model 475 can give you attractively sealed, economically produced packages.

Here is an all new packaging concept . . . an all new machine incorporating the latest electronic and mechanical devices for overwrapping in plastic films. Battle Creek's exclusive "Thermo-Pad" sealing process as well as properly placed static eliminators for controlling the films being handled, are the new key features assuring you trouble-free wrapping at speeds up to 65 packages per minute. Available with choice of infeeds and optional equipment as desired.

PACKAGES LIKE THESE . . . NOW PRODUCED ON FORMER OVERWRAPPING MACHINES CAN BE EFFICIENTLY HANDLED BY THE NEW MODEL 475

Typical applications include underwear, handkerchiefs, pillow slips, bed sheets, bras, etc. attractively wrapped at "Continuous Flow" speeds up to 70 per minute. A special 5" to 9" range is available for especially wide packages.

Battle Creek's Extensive Line of Standard Overwrapping Machines Continues to Serve Packagers Everywhere.

Battle Creek Invites Your Inquiries On Any Overwrapping Problem You May Have . . . On the New Model 475 Or On Standard Machines in Our Line.

NEW! Here's a solvent cleaner just perfect for textile mills

It's Oakite 117 – a cold cleaning solvent that's custom-tailored for use on looms, twisters, reed parts and other textile equipment.

CLEANS FAST. Especially effective on combinations of lint, grease, oil and smut.

DRIES DOWN quickly and completely under air blow-off or wiping.

HIGH FLASH POINT. You get safety to spare.

And low cost adds a straight dollars-and-cents advantage to Oakite 117. Want more details? Write to Oakite Products, Inc., 52D Rector St., New York 6, N. Y.

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Technical Service Representatives in Principal Cities of U. S. and Canada

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Check with Courts & Co.

That is a logical thing to do whenever you have a question about textile securities.

Headquartered in Atlanta, and with offices in New York and throughout the Southeastern textile states, we keep in close touch with the industry and the markets for its publicly traded securities.

Our Industrial Properties Department is also active and successful in the negotiation of textile mergers and acquisitions.

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NEWS ABOUT MEN

Russ P. Arnold has been named manager of Vinton Weaving Co., a subsidiary of Burlington Mills, Vinton, Va.

David Arthur has joined Irving Worsted Co., Chester, Pa., as general manager. He also has been elected a director.

Peter J. Austin has been named resident manager of Firth Carpet Co.'s new plant in Laurens, S. C.

Williant R. Beuret, executive vice president of Newberry Mills, Inc., Newberry, S. C., has been placed in charge of the plant.

Ted Bodin has joined American & Efird Mills, Inc., New York, N. Y., and will work in the yarn-development and color sections.

F. P. Bowden, treasurer of Arbeka Webbing Co., Pawtucket, R. I., has been elected president, succeeding George Proctor.

MacMillan Boyd has been named to the board of directors of Kenwood Mills Ltd., Arnprior, Ont.

James E. Britt has resigned as vice president and general manager of Newberry Mills, Inc., Newberry, S. C.

Willard Burrow has been transferred by Burlington Industries, Inc., from Vinton Weaving Co., Vinton, Va., to Hess, Goldsmith & Co., Inc., Wilkes-Barre, Pa.

Jack C. Childers has been placed in charge of all manufacturing operation of Erlanger Mills, Inc., Lexington, N. C.

Herman Cone, Jr., has been named manager of Cone Mills Corp.'s Revolution Div., Greensboro, N. C.

Smith Crow, Sr., has retired as vice president in charge of manufacturing at Erlanger Mills, Inc., Lexington, N. C.

Frederick B. Dent has been elected president of Mayfair Mills, Arcadia and Easley, S. C.

John Dewhurst has been named overseer of dyeing for Glen Woolen Co., Norwich, Conn.

Wyatt Dick has been named general manager of Kenwood Mills Ltd., Arnprior, Ont.

Robert J. Dinan has resigned as vice president and manager of Worumbo Mfg. Co., Lisbon Falls, Me. He has accepted a position with W. J. Dickey & Sons Co., Oella, Md.

Kirke Dunlay has been promoted to director of manufacturing, Kenwood Mills Ltd., Arnprior, Ont.

Edgar K. Fitch has retired as treasurer of Mt. Vernon Mills, Inc., Baltimore, Md.

Thomas P. Handwerk has been named executive vice president of the Textile Div., Narrow Fabric Co., Reading, Pa.

Mack D. Heaton has been named superintendent of Mt. Vernon Mills, Inc., Columbia, S. C., succeeding John R. Hilton.

James E. Hooper, Sr., has been named president of William E. Hooper & Sons, Inc., Philadelphia, Pa., succeeding his father.

Stuart E. Houston has been named director of administration at Kenwood Mills Ltd., Arnprior, Ont.

Otto E. Huber has been named a director and vice president in charge of manufacturing for Narrow Fabric Co., Reading, Pa.

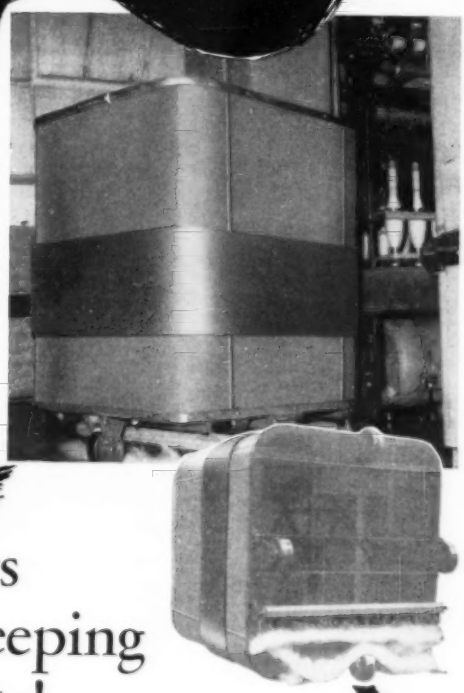
Ferdinand M. Johnson has joined Cone Mills Corp., Greensboro, N. C., in the newly created position of administrator of the Research and Development Div.

Wesley Jones has been promoted to treasurer of Mt. Vernon Mills, Inc., Baltimore, Md., succeeding E. K. Fitch.

Norman Layton, vice president in charge of merchandising for the Fabrics Div. of Wamsutta Mills, New Bedford, Mass., has resigned.

 For more data, circle A-129 on Reader Service Card

The New Excel Bonus-Sweeper



Cuts Sweeping Costs!

This NEW BONUS-SWEEPER will improve quality by keeping your floor 90% cleaner!

As operator is creeling, box is pushed along aisle, collecting fly and balling it up. When brush fills up, it *automatically* kicks up and leaves collected fly for sweeper to pick up on regular rounds.

By marking one end of the box and pushing the same marked end, it will protect three of the four casters on your box. The brush will eliminate lint and travelers that tangle up your casters, saving you time and money. The Excel Bonus-Sweeper can be installed on your present boxes. *Patents Pending.*

The Bonus Sweeper will cut your sweeping costs up to 35%!

Write or call for descriptive information at no obligation.

REPRESENTATIVES:

Mr. E. E. Eurey	203 Hampton Ave., Clinton, S. C.
Mr. N. W. Eurey	Box 406—Lincolnton, N. C.
Mr. Paul Eurey	Box 406—Lincolnton, N. C.
Industrial Suppliers, Inc.	LaGrange, Ga.
Julian W. Still	Box 7294—Atlanta, Ga.

EXCEL, INC.

Lincolnton, N. C. • Phone REgent 5-2012

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The Laurel Leaf

BUSINESS MAGAZINE EDITION

NEW *LAUREL POLYLUBE* FFN . . . LAST WORD IN FINISHING AGENTS

Newest member of Laurel's quality line, POLYLUBE FFN—versatile, easy-handling, stable, and semi-permanent—brings a fresh concept to textile finishing practice. A non-ionically dispersed polyethylene emulsion, it has already earned wide approval in actual field use.

For versatility, POLYLUBE FFN can't be beaten. It's an excellent softener and lubricant for cotton, rayon, and synthetic yarns and fabrics. It makes an effective high-speed sewing thread lubricating agent, too. Applied to piece goods, it imparts a soft, springy hand and notably improves the drape of the fabric, enhancing sewing and cutting properties. And, it *materially increases* both tear strength and crease resistance when applied to resin-treated goods.

Laurel POLYLUBE FFN is stable to acids, alkalies, and salts—even in high concentrations. It form dispersions almost colloidal in particle size, for uniform application and penetration. It does not contain waxes, oils, or other diluents, and remains stable over long periods.

For semi-permanence and ease of handling, POLYLUBE FFN is excellent, too. It is highly resistant to laundering, and may be prepared in either cold or hot water, and applied in a variety of ways.

For a liberal *free* sample and complete directions for use, write us *today*. We know you'll be delighted with this newest member of the Laurel family of quality textile products.

Laurel Brand

Laurel SOAP MANUFACTURING CO., INC.

TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses:

Paterson, N. J., Chattanooga, Tenn. Charlotte, N. C., Greenville, S. C.

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cut your traveler costs 35% with the *NEW* Standard LINT FREE TRAVELER CLEANER

Standard has developed a revolutionary traveler cleaner to meet the demands of today's larger packages and higher traveler speeds

MFD. Under U. S. Patent #2,849,853

Self cleaning, the blade acts partially as an air cleaner and prevents lint from forming on the cleaner or traveler. Manufactured from quality stainless steel . . . will not rust.

Standard cleaners can be installed on all types of holders . . . including plate holder. Easily adjusted to any weight or circle traveler desired. Also adaptable to running reverse twist. Standard guarantees results. Over 1 million Standard Lint Free Traveler Cleaners in operation today. *Call or write for complete information at no obligation.*

• DOFFING OF FRAMES SPEEDED-UP 10-15% • SAVING IN TRAVELER WEAR—35% • BETTER QUALITY YARN • SAVINGS ON RINGS

Standard Textile Machine Works

203-205 Magnolia St. Telephone 7780
SPARTANBURG, S. C.

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317 SOUTH TRYON STREET, CHARLOTTE, N. C.

NEWS ABOUT MEN Continued

Hugh W. Logan has retired as president of Hightstown Rug Co., Hightstown, N. J.

L. W. Macdonald has been named to the board of directors of Kenwood Mills Ltd., Arnprior, Ont.

Cyril Mahy has been named supervisor at Cosmos Imperial Mills Ltd., Yarmouth, N. S.

Roy G. Manderbach has retired as a director and vice president in charge of manufacturing, Narrow Fabric Co., Reading, Pa.

John H. McGowan, Wyandotte Worsted Co., Waterville, Me., has been named chairman of the executive committee of the directors of National Association of Wool Manufacturers. He succeeds T. B. Nilsen, J. P. Stevens & Co., Inc., North Andover, Mass.

LeRoy W. McGrath has retired as treasurer of Narrow Fabric Co., Reading, Pa.

Thomas B. Murray, formerly manager of Burlington Industries' plant at Carrboro, N. C., has been transferred to the company's plant in Lexington, N. C.

W. E. Prentice has been named to the board of directors of Kenwood Mills Ltd., Arnprior, Ont.

Bernard Rosenblatt has been appointed vice president of Standard Yarn Mills, Inc., Glendale, N. C.

Henry Rosenblatt has been named chairman of the board of directors of Standard Yarn Mills, Inc., Glendale, N. C.

Chester H. Roth has been elected president of Kayser-Roth Corp., New York, N. Y.

John L. Sherrill has been named manager of Cone Mills Corp.'s Pineville Plant, Pineville, N. C., and its Minneola Plant, Gibsonville, N. C.

Earl Smith has been named spinning overseer at Orr Felt & Blanket Co., Piqua, Ohio.

Frank Starling has been named manager of Cone Mills Corp.'s Proximity Plant, Greensboro, N. C., and the Edna Plant, Reidsville, N. C.

Harold R. Walker has been named chief chemist at Abbeville Mills Corp., Inc., Abbeville, S. C.

Textile World

OBITUARY

Edward Moseley Abbot, president and chairman of the board of the former Abbot Worsted Co., Graniteville, Mass.

Robert J. Freitag, 83, retired vice president and treasurer of Steel Heddle Mfg. Co., Philadelphia, Pa.

Rev. Thomas Colquitt Hardman, 88, vice president of Harmony Grove Mills, Commerce, Ga.

Clarence L. Jolly, Sr., 56, retired superintendent of Cone Mills Corp.'s Edna Plant, Reidsville, N. C.

Thomas J. Kennedy, 68, a retired vice president and director of Berkshire Hathaway, Inc., Providence, R. I.

Alfred Marum, 81, president of Marum Knitting Mills, Inc., Lawrence, Mass.

George B. McCallum, 83, retired treasurer of Forstmann Woolen Co., Passaic, N. J.

James W. Miller, 73, superintendent, spinning, Perfection Spinning Co., Belmont, N. C.

E. V. Trammell, 58, supervisor of weaving at Piedmont Mfg. Co., Piedmont, S. C.

Joseph Edward Walworth, 86, partner in the former Walworth Bros. textile mill in Lawrence, Mass.

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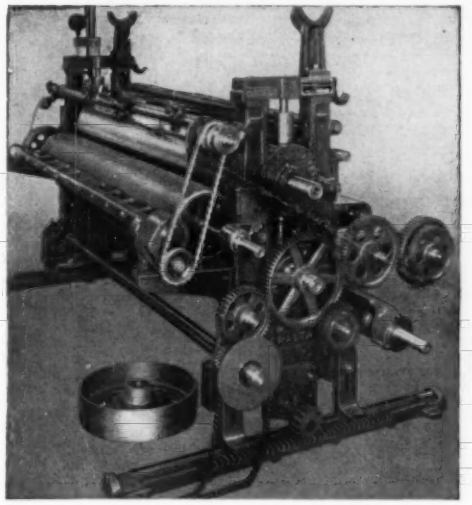

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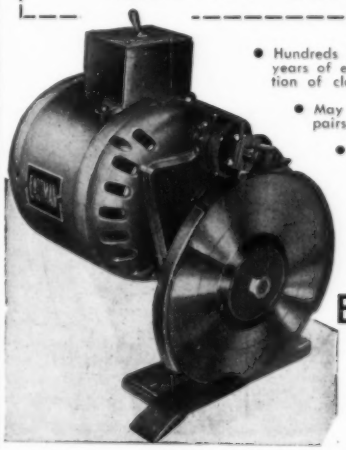

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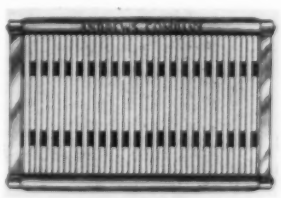

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10/58

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of the

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Dyeing, Finishing, & Printing Plant

1—V. V. Super Finishing Range 80'x66", Nat'l housing—1956
1—Werner Hyd. Schreiner Cal. 50", 50 ton, 1956.
1—V. V. Hyd. Calendar, 70", 15 ton, 1949
1—Burlington Pressure Dryer, 1948
1—Verduin Hyd. Padder, 60", 6 ton, 1951
1—Birch 72" Scutcher & Vac. Extr.
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4—V. V. Stainless Dye Jiggs 70" 1950.
6—Werner Stainless Dye Jiggs, 60"—1948
1—Nat'l Model E Loop Dryer, 102" 8 fans
1—V. V. Palmer Tenter Unit, 70' long.
2—V. V. high speed tubers, 1954
1—V. V. Singer, 64", 4 burners
1—R. B. F. 10 color Print Mach, 58" wide
1—R. B. F. 8-color Print Mach 60"
1—Textile 8 color Print Mach, 50"
1—R. B. F. 6-color Print Mach. 48"
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14—Draper X-D 64" looms 64" dobby 1940

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1—TENTER FRAME, Verduin, 128" x 40', Over/Under, Pin Type.
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1—TIGER, C&M., 66", Single Roll, Motor.
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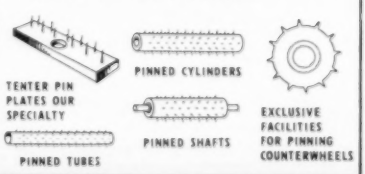

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48—XK 46" Looms 1 x 1.
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300—UNIVERSAL #50 Coners
L Drive . . Gear Gain . . Late

24—SPINDLES King Spoolers

1—Model 110 Twister, 2 lb.

2—FLETCHER 1948, 66' webbing looms

1—SACO AUTO FEEDER . . 24"
60" Duster . . 1950 Model

3—U. S. TEXTILE DOUBLERS
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79" Draw-in Frame

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Model 735

3—EXTRACTORS, FLETCHER,
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2000M—Drawtex Heddles, 12"
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2—Scott Model J testers
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1—9-Nip Open Soaper 50" face, Double Gear & Chain Drive.
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MANUFACTURERS OF QUALITY CARD CLOTHING SINCE 1892

REDUCE YOUR NEP COUNT! WITH MICR-O-GRIND*

*Pat. Pending

CARD CLOTHING

MILL TESTS SHOW:

Nep count reduced 40%

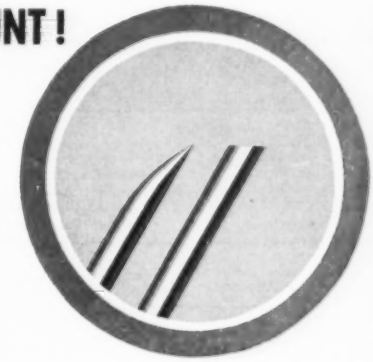
Blending improved substantially

Yarn strength up 10%

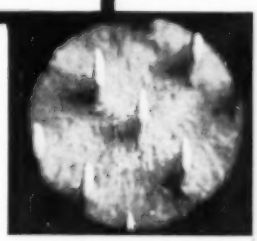
Grinding 80% less frequent

Grinding time less than 30 minutes (normal 6-8 hours)

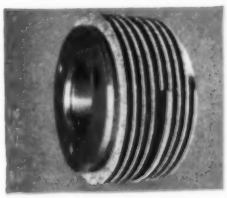
Stripping 65% less frequent



Booth card clothing may now be obtained with a **new and exclusive** extra sharp needle point. With your first purchase of this new clothing, the MICR-O-GRIND head is available for rent so that you can regrind it yourself.



Note needle point from MICR-O-GRIND (left) compared with conventional flat point (right). Extra sharp MICR-O-GRIND points card out the neps and reduce the nep count as much as 40% on cotton. Sharper points also allow stock to release itself—hence less loading—and also give greatly improved carding action. Stripping of cotton cards only once a shift—on woolen cards as little as once a month.



Grinding discs are spiraled to take off the heel of each tooth. MICR-O-GRIND head fits your conventional grinding shaft.

HOW IT WORKS

MICR-O-GRIND card clothing is ground with spiral abrasive discs that take the heel off the wire. Accuracy of initial grind is assured by exclusive Booth electronic monitor controls. This leaves a needle-like point, long recognized as ideal for card clothing. *Never before has this ideal been attained.* Conventional grinding invariably leaves a flat point because no way was known to grind the teeth to a perfect point.

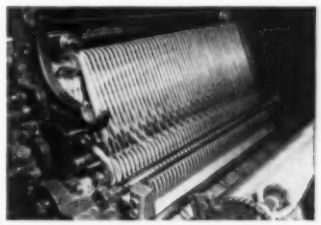
IMPROVED QUALITY

The needle point of the teeth holds the fibres long enough to be thoroughly carded and yet does not tear the fibres. This provides a more gentle combing action for increased yarn strength, better blending and reduces neps by as much as 40% in cotton carding.

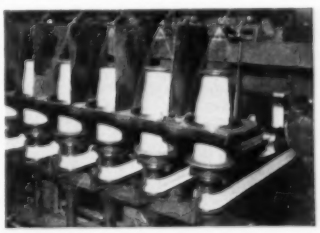
Needle point is smooth enough to release the stock easily, yet the fine serrations (as seen under a microscope) will not let the fibres escape without being carded. This also means that there is less beating action at the doffer comb as the web flows more readily off the card.

REDUCED COSTS

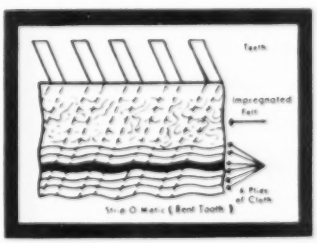
through reduced Down Time for grinding and stripping. MICR-O-GRIND clothing is very inexpensive—only 5% more. The MICR-O-GRIND needle point can be applied to any type of card clothing—the only difference is the point. In a cotton mill, you can get your standard 100's, 110's, etc., in either CCWC, CWC or rubberfaced foundation—also any woolen clothing.



SUPR-O-TAPE—the new proven condenser tape for longer life—improved roving—no stretch—no cracking—no need to oil—no dropped ends—holds square edges indefinitely.



SUPR-O-BAND—a new banding for spindle drives on twisting, roving and spinning frames for longer life—high friction surface—rough, rugged construction—positive drive—LINT FREE.



STRIP-O-MATIC—clothing greatly reduces stripping waste, down time and costs.

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INDEX TO ADVERTISERS

An * indicates advertisers who have essential technical information on their products in the **IMPORTANT** 1958 **FACT FILE** issue.

*Adams, Inc. 165
Alemite Div. Stewart-Warner Corp. .. 112
*Allen-Bradley Co....3rd Cover
American Moistening Co.. 20
*Andrews Co. 201
*Andrews & Goodrich Div. Midland-Ross Corp. ... 16
Anheuser-Busch, Inc..... 167
Antara Chemical Div. General Aniline & Film Corp. 109
*Appleton Machine Co..... 184
Armco Steel Corp..... 181
Armstrong Cork Co.....88-89
*Atkinson, Haserick & Co.. 92
*Aurora Pump Div., The New York Air Brake Co. 178

*Bahnson Company 24
Barber-Colman Co. Textile Div. 180
Battle Creek Pkg'g Machs., Inc. 196-197
*Booth Co., Benjamin..... 207
Borne Chemical Co., Inc. 192
Bristol Co. 171

Celanese Corp. of America 130-131
Chemical Corn Exchange Bank 19
Chemstrand Corp. 151
Ciba Co. 99
Cleveland Tramrail Div. Cleveland Crane & Eng'g Co. 162
*Cocker Machine & Foundry Co. 157
Continental-Diamond Fibre Div., The Budd Co., Inc. 186
Corn Prods. Sales Co..... 122
Courts & Co..... 198
Crane Co. 36
*Curlator Corp. 37
*Custom Scientific Instruments, Inc. 192

*Dary Ring Traveler Co... 143
*Davis & Furber Mach. Co. 140
Dayton Rubber Co., The Textile Div. 22-23
Delta Air Lines..... 174
Deutscher Spinnereimaschinenbau, Ingolstadt... 33
*Diehl Mfg. Co..... 166
Dixon Corp. 194
Dodge Mfg. Co..... 175
Dodge & Olcott, Inc..... 190
Dow Chemical Co..... 39
*Draper Corporation 40-41
Duesberg-Bosson of America, Inc. 201
*duPont de Nemours & Co., Inc., E. I. Electrochemical Dept... 125

Eastman Chemical Products, Inc., Yarn Div.... 195
Eastman Machine Co..... 201
Emerson Apparatus Co.... 182
Esso Standard Oil Co..... 147
*Excel, Inc. 199

Fairbanks Co. 160
Fairtex Corp. 141
Felters Co. 142
*Foster Machine Co..... 115
Franklin Process Co..... 135

Gardner-Denver Co. ...154-155
*Garland Mfg. Co..... 170
*Gessner Co., David..... 189
Globe Dye Works Co..... 136
*Graton & Knight Co..... 193

Hartford Machine Screw Co. 146
Hinde & Dauch..... 186
*Hubinger Co., The..... 126
Hungerford & Terry, Inc.. 188

*Ideal Industries, Inc..... 149
International Salt Co., Inc. 94
*Ives Co., Inc., L. T..... 28

*Johnson Corp. 193

Keever Starch Co..... 116
Kidde Mfg. Co..... 169

Laurel Soap Mfg. Co., Inc. 199
Leighton Machine Co..... 127
Lindly & Co., Inc..... 182
Link-Belt Co. 21
*Livingston & Haven, Inc.. 148
Lockwood Greene Engineers Inc. 188
Loper Co., Ralph E..... 200

*Main, Inc., Charles T..... 200
M-B Products Co. 182
Metlon Corp. 137
Morton Machine Works, Inc. 163
Morton Salt Co..... 119
*Mount Hope Machinery Co., Inc. 156

Nash Co., J. M..... 176
National Aniline Div., Allied Chem. Corp....27, 103
Fiber Sales Div..... 145
*National Drying Machinery Co. 32
Naugatuck Chem. Div. U. S. Rubber Co..... 105
*New Departure Div. General Motors Corp.... 29

Oakite Products, Inc..... 198

Parks-Cramer Co. 129
*Proctor & Schwartz, Inc.. 158
Progressive Engineering, Inc. 15

Radio Corp. of America.. 177
Raybestos-Manhattan, Inc. Manhattan Rubber Div.. 38
*Reiner, Inc., Robert..... 179
Republic Steel Corp....172-173
Rhoads & Sons, J. E..... 161
Rhodia Inc. 132
*Robert & Co., Associates 2nd Cover
Roberts Co. 17
*Rohm & Haas Co..... 123
Ryerson & Son, Inc., J. T. 185

*Saco-Lowell Shops 26, 90
*Schweiter Ltd. 144
*Scott Testers, Inc..... 187
Shawinigan Resins Corp... 121
Shell Chem. Corp..... 111
Signode Steel Strapping Co. 34
Sims Co. 30
*Sims Metal Works..... 191
*Societe Alsacienne De Constructions Mecaniques 92
Solvay Process Div. Allied Chem. Corp..... 117
*Sonoco Products Co..... 153
*Staley Mfg. Co., A. E..... 93
Standard Textile Mach. Works 200
Steel Heddle Mfg. Co..... 35
*Stowe-Woodward, Inc. ... 138
*Supreme Knitting Machine Co., Inc. 152

Tennant Co., G. H..... 18
Textile Banking Co..... 150
*Textile Machine Works... 42
*Thilmany Pulp & Paper Co. 159
*Thomason Textile Service, Inc. 178
Toledo Scale Co..... 164
Tompkins Bros. Co..... 174
Ton-Tex Corp. 192
Torrington Co., The (Bearings) 183
*Turbo Machine Co..... 44

Unionmatex, Textilmaschinen-Union G.M.B.H. 31
*U. S. Ring Traveler Co... 176
Universal Winding Co.... 100

Veeder-Root, Inc. ...4th Cover
*Verona Dyestuff Div. Verona-Pharma Chem. Corp. 107

West Penn Power Co..... 168
West Point Fdry. & Mach. Co. 12
Whitin Machine Works... 25, 139, 144
Wildman-Jacquard Co. .. 11
*Wright Machinery Co. Div. of Sperry Rand Co. 193

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES 202
BUSINESS OPPORTUNITIES 203
EQUIPMENT (Used or Surplus New) For Sale 203-206
WANTED Equipment 206

ADVERTISERS INDEX

Advanced Textile Company..... 204
American Air Compressor Corp. 204
Bialek & Company, Theodore... 204
Blank Company, Inc. A. & M... 206
Fitzgerald, James E..... 205
Industrial Products of America 205
Machinery Sales Corporation.... 206
Mar-Day Textiles 205
McDowell Associates, Inc..... 204
Miller Machinery Company..... 204
Mohawk Valley Ktg. Machinery Co. 205
Pennsylvania Spool & Equipment Co. 206
Perry Equipment Corp..... 204
Rabinowitz & Sons, William.... 205
Republic Textile Equipment Co.. 203
Southern Textile Works..... 204
Stave & Kessler..... 204
Textile Auxiliaries Inc..... 206

This index is published as a convenience to the reader. Every care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Textile World

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. . . on Advertisements, Equipment & Supply News, New Dyes & Chemicals, or free New Literature described in this issue . . .

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LITERATURE, BOOKLETS AND TECHNICAL BULLETINS AVAILABLE FROM FOLLOWING ADVERTISERS IN THIS ISSUE:

L-1	Alemite Div.	112
L-2	Allen-Bradley Co.	3rd Cover
L-3	Antara Chemical Div.	109
L-4	Armco Steel Corp.	181
L-5	Aurora Pump Div.	178
L-6	Bristol Co.	171
L-7	Cleveland Crane & Eng'g. Co.	162
L-8	Continental-Diamond Fibre	186
L-9	Crane Co.	36
L-10	Curlator Corp.	37
L-11	Dodge Mfg. Co.	175
L-12	Dodge & Olcott, Inc.	190
L-13	Excel, Inc.	199
L-14	Felters Co.	142
L-15	Graton & Knight Co.	193
L-16	Hubinger Co.	126
L-17	Johnson Corp.	193
L-18	Laurel Soap Mfg. Co.	199
L-19	Link-Belt Co.	21
L-20	Morton Salt Co.	119
L-21	Mount Hope Machinery	156
L-22	Nash Co., Inc., J. M.	176
L-23	New Departure Div.	29
L-24	Proctor & Schwartz, Inc.	152
L-25	Radio Corp. of America	177
L-26	Republic Steel Corp.	172-173
L-27	Ryerson & Son	185
L-28	Scott Testers	187
L-29	Shawinigan Resins Corp.	121
L-30	Signode Steel Strapping Co.	34
L-31	Sims Co.	30
L-32	Solvay Process Div.	117
L-33	Supreme Ktg. Machine Co.	152
L-34	Thilmany Pulp & Paper Co.	159
L-35	Thomason Textile Service, Inc.	178
L-36	Ton-Tex Corp.	192
L-37	West Penn Power	168
L-38	Wildman-Jacquard Co.	11

This card expires December 31, 1958

ADVERTISERS' LITERATURE:

L-1	L-2	L-3	L-4	L-5	L-6	L-7	L-8	L-9	L-10	L-11	L-12	L-13	L-14	L-15
L-16	L-17	L-18	L-19	L-20	L-21	L-22	L-23	L-24	L-25	L-26	L-27	L-28	L-29	L-30
L-31	L-32	L-33	L-34	L-35	L-36	L-37	L-38							

ADVERTISEMENTS:

INSIDE FRONT COVER								INSIDE BACK COVER				BACK COVER	
A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14
A-15	A-16	A-17	A-18	A-19	A-20	A-21	A-22	A-23	A-24	A-25	A-26	A-27	A-28
A-29	A-30	A-31	A-32	A-33	A-34	A-35	A-36	A-37	A-38	A-39	A-40	A-41	A-42
A-43	A-44	A-45	A-46	A-47	A-48	A-49	A-50	A-51	A-52	A-53	A-54	A-55	A-56
A-57	A-58	A-59	A-60	A-61	A-62	A-63	A-64	A-65	A-66	A-67	A-68	A-69	A-70
A-71	A-72	A-73	A-74	A-75	A-76	A-77	A-78	A-79	A-80	A-81	A-82	A-83	A-84
A-85	A-86	A-87	A-88	A-89	A-90	A-91	A-92	A-93	A-94	A-95	A-96	A-97	A-98
A-99	A-100	A-101	A-102	A-103	A-104	A-105	A-106	A-107	A-108	A-109	A-110	A-111	A-112
A-113	A-114	A-115	A-116	A-117	A-118	A-119	A-120	A-121	A-122	A-123	A-124	A-125	A-126
A-127	A-128	A-129	A-130	A-131	A-132	A-133	A-134	A-135	A-136	A-137	A-138	A-139	A-140
A-141	A-142	A-143	A-144	A-145	A-146	A-147	A-148	A-149	A-150	A-151	A-152	A-153	A-154
A-155	A-156	A-157	A-158	A-159	A-160	A-161	A-162	A-163	A-164	A-165	A-166	A-167	A-168
A-169	A-170	A-171	A-172	A-173	A-174	A-175	A-176	A-177	A-178	A-179	A-180	A-181	A-182
A-183	A-184	A-185	A-186	A-187	A-188	A-189	A-190	A-191	A-192	A-193	A-194	A-195	A-196
A-197	A-198	A-199	A-200	A-201	A-202	A-203	A-204	A-205	A-206	A-207	A-208	A-209	A-210
A-211	A-212	A-213	A-214	A-215	A-216	A-217	A-218	A-219	A-220	A-221	A-222	A-223	A-224
A-225	A-226	A-227	A-228	A-229	A-230	A-231	A-232	A-233	A-234	A-235	A-236	A-237	A-238
A-239	A-240	A-241	A-242	A-243	A-244	A-245	A-246	A-247	A-248	A-249	A-250	A-251	A-252
A-253	A-254	A-255	A-256	A-257	A-258	A-259	A-260	A-261	A-262	A-263	A-264	A-265	A-266
A-267	A-268	A-269	A-270	A-271	A-272	A-273	A-274	A-275	A-276	A-277	A-278	A-279	A-280
A-281	A-282	A-283	A-284	A-285	A-286	A-287	A-288	A-289	A-290	A-291	A-292	A-293	A-294

EQUIPMENT AND SUPPLY NEWS:

T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13	T-14
T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22	T-23	T-24	T-25	T-26	T-27	T-28
T-29	T-30	T-31	T-32	T-33	T-34	T-35	T-36	T-37	T-38	T-39	T-40	T-41	T-42
T-43	T-44	T-45	T-46	T-47	T-48	T-49	T-50	T-51	T-52	T-53	T-54	T-55	T-56
T-57	T-58	T-59	T-60	T-61	T-62	T-63	T-64	T-65	T-66	T-67	T-68	T-69	T-70
T-71	T-72	T-73	T-74	T-75	T-76	T-77	T-78	T-79					

NEW LITERATURE:

F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-14
F-15	F-16	F-17	F-18	F-19	F-20	F-21	F-22	F-23	F-24	F-25	F-26	F-27	F-28
F-29	F-30	F-31	F-32	F-33	F-34	F-35	F-36	F-37	F-38	F-39	F-40	F-41	F-42
F-43	F-44	F-45	F-46	F-47	F-48	F-49	F-50	F-51	F-52	F-53			

DYES AND CHEMICALS:

D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	D-12	D-13	D-14	D-15
D-16	D-17	D-18	D-19	D-20	D-21	D-22	D-23	D-24						

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ADVERTISERS' LITERATURE:
L-1 L-2 L-3 L-4 L-5 L-6 L-7 L-8 L-9 L-10
L-11 L-12 L-13 L-14 L-15 L-16 L-17 L-18 L-19 L-20 L-21 L-22 L-23 L-24
L-25 L-26 L-27 L-28 L-29 L-30 L-31 L-32 L-33 L-34 L-35 L-36 L-37 L-38

ADVERTISEMENTS:
INSIDE FRONT COVER
A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-8
A-15 A-16 A-17 A-18 A-19 A-20 A-21 A-22
A-29 A-30 A-31 A-32 A-33 A-34 A-35 A-36
A-43 A-44 A-45 A-46 A-47 A-48 A-49 A-50
A-57 A-58 A-59 A-60 A-61 A-62 A-63 A-64
A-71 A-72 A-73 A-74 A-75 A-76 A-77 A-78
A-85 A-86 A-87 A-88 A-89 A-90 A-91 A-92
A-99 A-100 A-101 A-102 A-103 A-104 A-105 A-106
A-113 A-114 A-115 A-116 A-117 A-118 A-119 A-120
A-127 A-128 A-129 A-130 A-131 A-132 A-133 A-134
A-141 A-142 A-143 A-144 A-145 A-146 A-147 A-148
A-155 A-156 A-157 A-158 A-159 A-160 A-161 A-162
A-169 A-170 A-171 A-172 A-173 A-174 A-175 A-176
A-183 A-184 A-185 A-186 A-187 A-188 A-189 A-190
A-197 A-198 A-199 A-200 A-201 A-202 A-203 A-204
A-211 A-212 A-213 A-214 A-215 A-216 A-217 A-218
A-225 A-226 A-227 A-228 A-229 A-230 A-231 A-232
A-239 A-240 A-241 A-242 A-243 A-244 A-245 A-246
A-253 A-254 A-255 A-256 A-257 A-258 A-259 A-260
A-267 A-268 A-269 A-270 A-271 A-272 A-273 A-274
A-281 A-282 A-283 A-284 A-285 A-286 A-287 A-288
INSIDE BACK COVER
A-9 A-10 A-11 A-12
A-23 A-24 A-25 A-26
A-37 A-38 A-39 A-40
A-51 A-52 A-53 A-54
A-65 A-66 A-67 A-68
A-79 A-80 A-81 A-82
A-93 A-94 A-95 A-96
A-107 A-108 A-109 A-110
A-121 A-122 A-123 A-124
A-135 A-136 A-137 A-138
A-149 A-150 A-151 A-152
A-163 A-164 A-165 A-166
A-177 A-178 A-179 A-180
A-191 A-192 A-193 A-194
A-205 A-206 A-207 A-208
A-219 A-220 A-221 A-222
A-233 A-234 A-235 A-236
A-247 A-248 A-249 A-250
A-261 A-262 A-263 A-264
A-275 A-276 A-277 A-278
A-289 A-290 A-291 A-292
BACK COVER
A-13 A-14
A-27 A-28
A-41 A-42
A-55 A-56
A-69 A-70
A-83 A-84
A-97 A-98
A-111 A-112
A-125 A-126
A-139 A-140
A-153 A-154
A-167 A-168
A-181 A-182
A-195 A-196
A-209 A-210
A-223 A-224
A-237 A-238
A-251 A-252
A-265 A-266
A-279 A-280
A-293 A-294

EQUIPMENT AND SUPPLY NEWS:
T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8 T-9
T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22 T-23
T-24 T-25 T-26 T-27 T-28 T-29 T-30 T-31 T-32 T-33 T-34 T-35 T-36 T-37
T-38 T-39 T-40 T-41 T-42 T-43 T-44 T-45 T-46 T-47 T-48 T-49 T-50 T-51
T-52 T-53 T-54 T-55 T-56 T-57 T-58 T-59 T-60 T-61 T-62 T-63 T-64 T-65
T-66 T-67 T-68 T-69 T-70 T-71 T-72 T-73 T-74 T-75 T-76 T-77 T-78 T-79

NEW LITERATURE:
F-1 F-2 F-3 F-4 F-5 F-6 F-7 F-8 F-9 F-10 F-11
F-12 F-13 F-14 F-15 F-16 F-17 F-18 F-19 F-20 F-21 F-22 F-23 F-24 F-25
F-26 F-27 F-28 F-29 F-30 F-31 F-32 F-33 F-34 F-35 F-36 F-37 F-38 F-39
F-40 F-41 F-42 F-43 F-44 F-45 F-46 F-47 F-48 F-49 F-50 F-51 F-52 F-53

DYES AND CHEMICALS:
D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10
D-11 D-12 D-13 D-14 D-15 D-16 D-17 D-18 D-19 D-20 D-21 D-22 D-23 D-24

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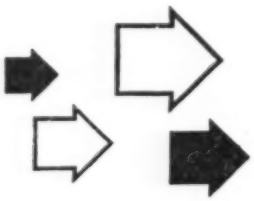

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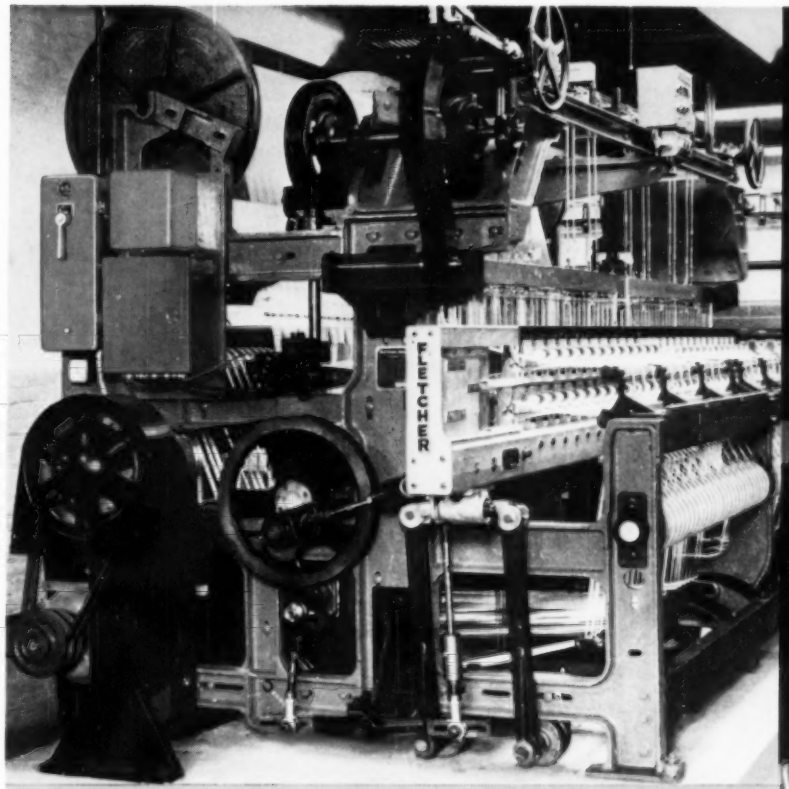

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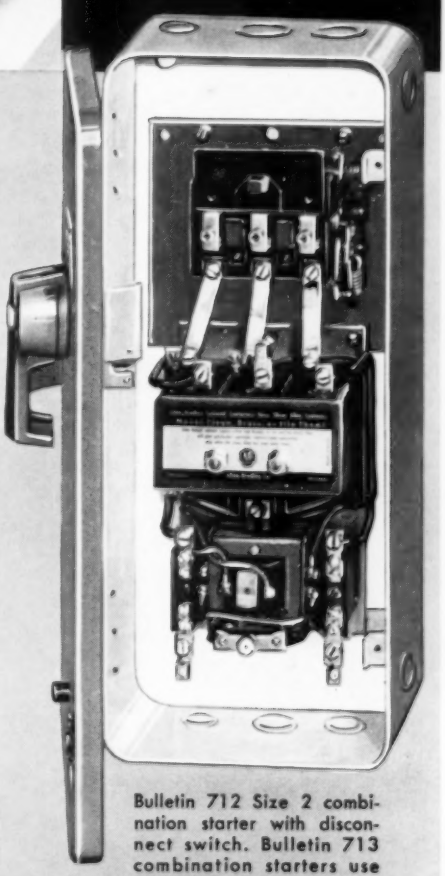

Bulletin 712 Size 2 combination starter with disconnect switch. Bulletin 713 combination starters use I.T.E. circuit breakers as a disconnect means.

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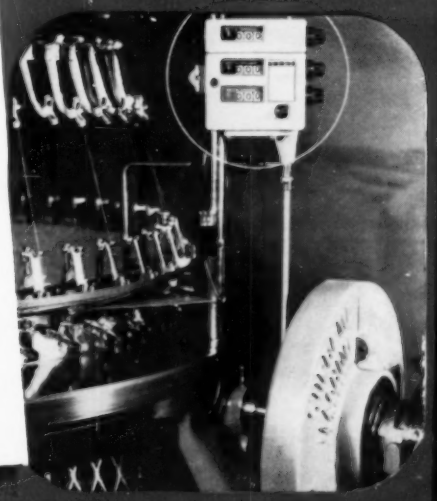
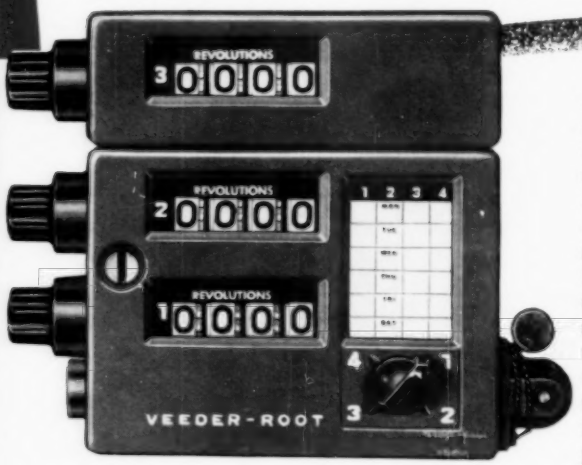


3-shift Revolution Counter on Supreme Knitting Machine.



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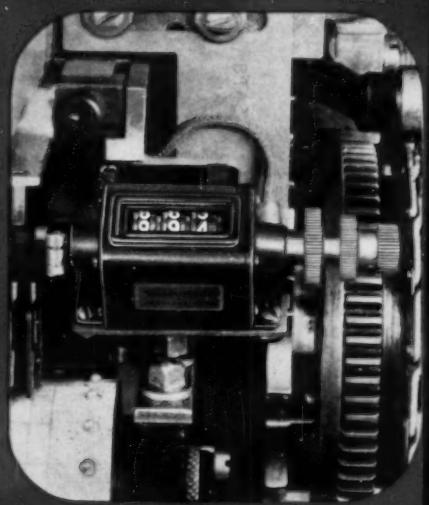
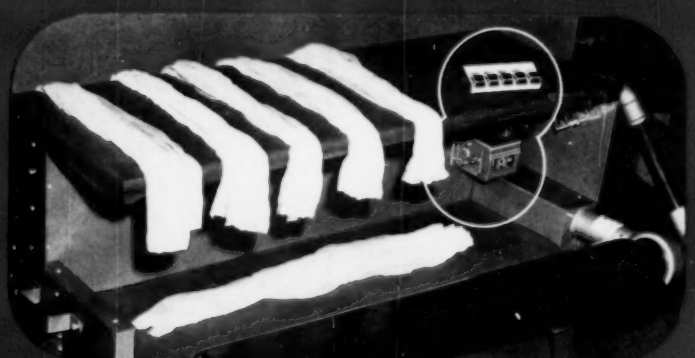
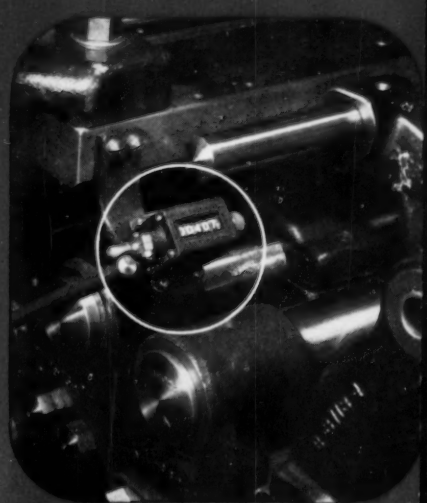


Small Subtractive Predetermining Counter on Philadelphia Jacquard Knitting Machine.



Vary Tally and Large-Figure Hosiery Dozens Counter on Specialty Mfg. Company's "Inspectomatic" Table.



Small Reset Ratchet Counter on Textile Machine Works' full-fashioned hosiery machine.

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